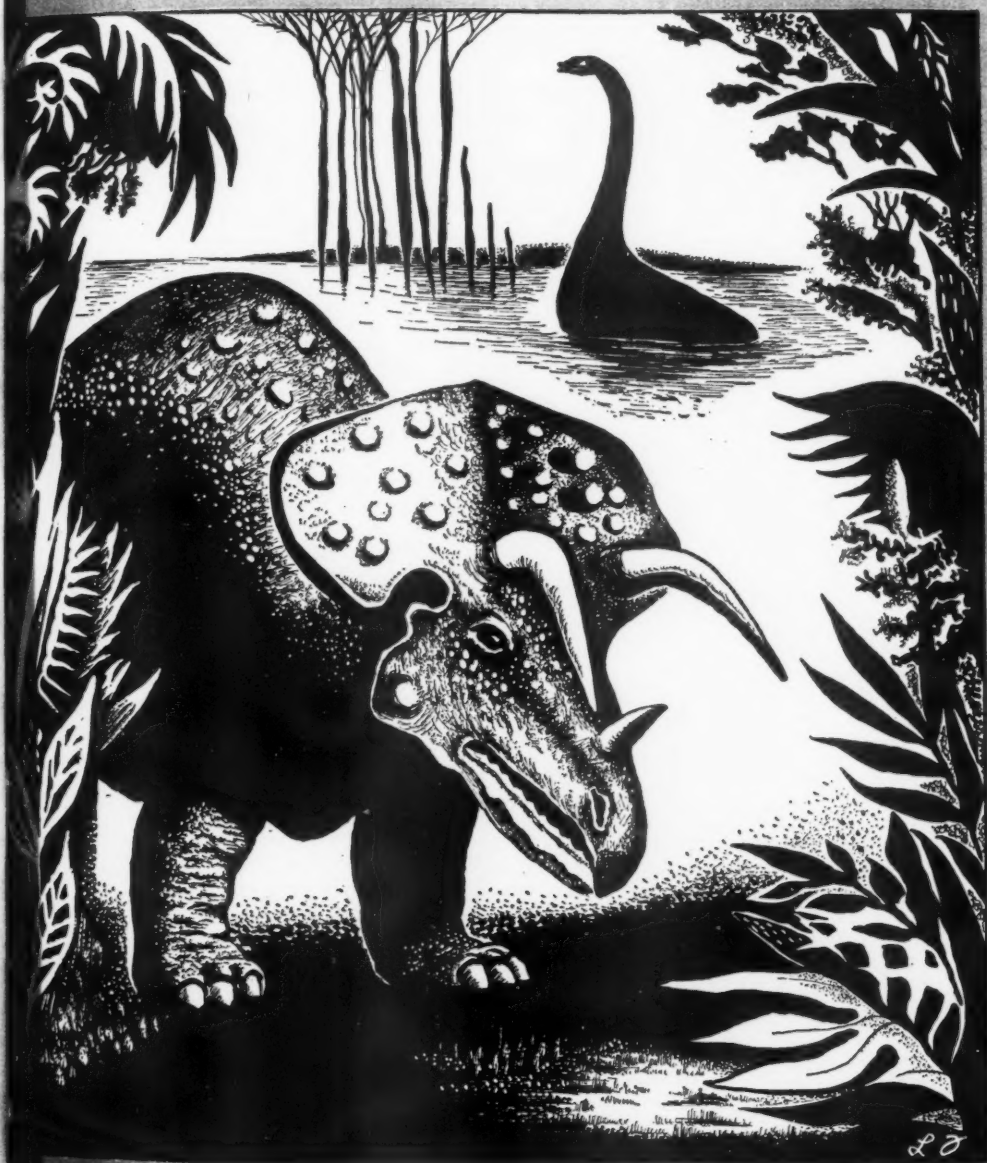


JUNIOR ARTS & ACTIVITIES

CLASSROOM ACTIVITIES FOR THE ELEMENTARY TEACHER



WHEN THE EARTH WAS YOUNG

CLOSING DAY ACTIVITIES—PLAY—POEMS—INDEX

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VOLUME 21 • NUMBER 2

JUNE
1947
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THE LETTER BOX

This department is calculated to add to Junior Arts and Activities' usefulness to you. Each month we shall answer as many of your questions as possible in these columns. In addition, each question received will be answered by a personal letter.

To give you the benefit of the knowledge and opinions of more than one individual, we have planned that your questions will be answered by different individuals on our staff, including the editor of Junior Arts and Activities.

Address all questions to the Editor, Junior Arts and Activities, 4616 North Clark Street, Chicago 40, Illinois.

Dear Editor:

Please send me any information about panel discussion concerning the correlation of sixth grade English and reading. I should like any material suitable for such discussions, including the teaching of letter writing for sixth-grade pupils.

—B.M., Ohio.

Here are some books which contain helpful material:

Betzner and Moore: *Every Child and Books* (Bobbs-Merrill)

Broning: *Conducting Experiences in English* (Appleton)

Broom, et al.: *Effective Reading Instruction In the Elementary School*

(McGraw)

Gustin and Hayes: *Activities in the Public Schools* (University of North Carolina Press)

Hatfield: *An Experience Curriculum in English* (Appleton)

Jenkins and Lang: *Development in the Elementary Grades* (Nelson)

Lamoreau and Lee: *Learning to Read Through Experience* (Appleton)

Macomber: *Guilding Child Development in the Elementary School* (American)

McKee: *Language in the Elementary School* (Houghton)

Pennell and Cusack: *The Teaching of Reading For Better Living* (Houghton)

The entire activity program is based, as you know, on the integration of various subjects of the curriculum. English and reading may be so correlated by, for example, a unit based on a favorite book or author of the class. Then, in writing reports, letters, stories, and so on, principles of correct English will come about naturally. This is the procedure favored by most authorities who believe that, after the primary grades,

there should be as little drill work as possible unless such drill is directly needed by the class in fulfilling a desired project or activity.

Dear Editor:

Where can I find books about plants and animals of the past? I need this material suitable for intermediate grades or for teacher reference.

—J.A., New York.

In addition to the large unit in this month's issue of our magazine, the following books should give you supplementary material on prehistoric times and the animal inhabitants of the world in prehistoric times:

Adshead: *Something Surprising* (New York: Oxford, 1939)

Ditmars: *The Book of Prehistoric Animals* (Philadelphia: Lippincott, 1935)

Fenton: *Life Long Ago: the Story of Fossils* (New York: John Day, 1937)

Includes plant and animal life.

Robinson: *Ancient Animals* (New York: Macmillan, 1934)

Smith: *So Long Ago* (Boston: Houghton)

(Continued on page 2)

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LETTERS

(Continued from page 21)

ton Mifflin, 1944)

If your local library does not have these volumes and you wish to contact the publishers, here are their addresses:

Oxford University Press, 114 Fifth Ave., New York 11

J. B. Lippincott Co., 227 S. Sixth St., Philadelphia 6, Pennsylvania

John Day Co., 2 W. 45 St., New York 19

Macmillan Co., 60 Fifth Ave., New York 11

Houghton Mifflin Co., 2 Park St., Boston 7

Dear Editor:

Do you have any aids for teachers in the matter of room decorations?

—E.B., Nebraska.

I believe that the best thing for you to do is to write to various school supply houses. Ask them about what material they can furnish you. Here are several of them to which you might write:

Beckley-Cardy Co., 1632 Indiana Ave., Chicago 16

Hoover Brothers, Inc., 922 Oak St., Kansas City, Missouri

Schneider & Co., Inc., 123 W. 68 St., New York

Arthur Brown & Brothers, 67 W. 44 St., New York 18

The House of Art, 6 E. 34 St., New York, 16

Favor, Ruhl & Co., Inc., 425 S. Wabash Ave., Chicago 5

Dear Editor:

Please inform me of the procedure involved in securing five copies of the historical pageant "The Voice of America" as given in the January, 1947 issue of Junior ARTS and ACTIVITIES.

—A.F.E., Ohio.

To receive these copies simply send \$2.00 (40c per copy) to our circulation manager stating your request. I regret that we cannot send you tear sheets of this pageant; however, the cost of filling such requests is prohibitive.

RENEWAL NOTICE!

Be sure to notice the address on the wrapper of this magazine — if it is marked 6-47, your subscription expires with this issue.

In order to assure yourself of uninterrupted service and that you will have your magazine at the beginning of the fall term, send in your renewal order today to

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Junior Arts & Activities

4616 N. Clark St.

Chicago 40, Ill.

IDEAS

Ideas for you to use in your classroom, projects, activities, correlations are all available to you in back issues of *Junior Arts and Activities*!

If you do not have a complete file of these magazines, you will find many valuable suggestions in the back issues, a limited quantity of which are still available! Below are listed May and June issues and a few of their outstanding features.

May, 1939—complete work unit on "Ancient Greece," study of birds and bird map, clay modeling craft, seasonal work, crepe paper work.

June, 1939 — complete music unit, farm and animal material, Flag Day program and project, outline of California history.

June, 1940 — "The Story of Light," a complete unit; circus activities, safety projects, study of fish, travel quiz, summer sketches.

June, 1941 — "A Mother Goose Assembly," unit on bees, Flag Day project, circus material, finger painting, safety material, "The Central American Republics."

May, 1943—units on radio, the month of May, the hummingbird, transportation; crayon etching, woodworking project, Mother's Day material.

June, 1943 — units on summer activities, the zoo, Washington (state); graduation program and class book, June decorations, Flag Day material, the story of the great seal of the U. S.

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Junior ARTS & ACTIVITIES

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USING PROJECT MATERIAL IN THIS ISSUE

On pages 6 and 7 we have shown a sand-table airport. Modeling and construction ideas from this project can also be incorporated into other sand-table projects. This particular one may easily be made more elaborate or simple, depending on the time the class has for the project and the abilities of the children.

In the airplane paperweight project on page 10 we have suggested the use of plastic wood in order to attach the plane to the base. The use of this type of material in other construction projects should not be overlooked. It is not a very expensive material (unless, of course, it is used in huge quantities) and it insures the stick-to-itiveness of construction work.

The gift for father on page 13 might also go into teachers' files of things to make for Christmas. The collection of shells and pebbles for this kind of project may be begun during the summer months when the children have more opportunity to find this material.

A whole series of "Pillows That Are Fun" (page 14) might be worked out. A collection of circus pillows, flower pillows, map pillows (outlines of different states, countries, or continents), fish pillows, food pillows, and the like might be attempted. The designs would not need to be detailed—general outlines or caricatures as we have shown are best and also are the easiest to make.

The "Summer Activity Chart" which we have pictured on page 28 contains merely suggested activities for children during the summer months. Depending upon the community and the activities particular to it, individual charts will be varied to include things which we have not mentioned.

The story of the origins of our flag (page 33) may very well be incorporated into a Flag Day program. Based on the story, as we have shown, the children can make up a dramatization of this story. One child might act as narrator while a group of children act out the story in pantomime.

The illustrations on pages 36 and 37 are principally for use in the clay

modeling project on page 39. However, such illustrations are also suitable models for sketching and drawing and possibilities for design ideas.

The idea of an illustrated chart depicting the various ages may well be adapted to other studies. In a state unit, for example, such a chart may be appropriate in showing the development of the state and may serve to fix more firmly in the minds of the children the different historical periods of the state or any community study.

Clay modeling (see page 39) would seem to be one of the most enjoyable types of projects in connection with unit studies and in the correlation of art with such studies. Children usually like to work with clay and the close study of the models, which is necessary to make the object recognizable, naturally inculcates into the minds of the children knowledge of the subject.

FEATHERED FANTASY

This is a spring nature program designed for presentation before a microphone in an assembly hall. Woodland animals and birds personified—they tell about the habits and migrations of birds in a dramatic, interesting fashion.

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THE NATIONAL MAGAZINE
FOR THE ELEMENTARY
TEACHER OF TODAY

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THIS MONTH

June, 1947

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From The Editor's Desk . . .



Training the child for parenthood and giving him an appreciation for and opportunity for participation in family activities have been the themes for discussion this year. We chose these themes with apologies because everyone must realize that teachers have enough work to do without undertaking to inculcate these rather fundamental concepts. Nevertheless, since we have developed tendencies of irresponsibility it is to the children—the parents of the next generations—that we must look for improvement in the state of things.

Now the school year is over and children will be, so to speak, returning to their homes. Family activities will

again occupy almost all of their thinking and planning. If our training is ever to show results, some evidence of it will be found in the manner in which the children use their summer vacation.

There is a definite limit to what the school can do to encourage children to make use of their vacation in family activities. It will only breed disappointment in the child to outline what activities might be carried out with his mother and father if they have neither the time nor the inclination to follow through. Every teacher must know her pupils and her community before she suggests definite things.

If older pupils have been schooled to accept responsibility, however, there is one very useful activity in which they may engage. That is the direction of the play of younger children (not babies, of course). It might be worked in this manner: under the direction of some older person—perhaps one parent in the neighborhood—the children might have a part in caring for the younger children in the block, playing games, seeing that they did not play in the street, teaching them simple games, and the like. Older children in large families usually share the responsibility for the younger ones so this activity might well be a substitute for it.

Playing with dolls can be a really stimulating thing for little girls. They can plan all sorts of things to do with their "children"—taking them on picnics, teaching them manners, caring for them when they are ill, and so on. If the activity is begun in school, the children will have a background for it.

All these things are designed to make children aware both of the responsibilities and of the pleasures of family life without drawing too much on the child's home background to its disadvantage. Rather, they point up the good things in the home, enlarge and improve upon them, and broaden the children's outlook.

We admit that we have been, in a mild way, crusading during the past year. We hope that some of our notions have stimulated thought and discussion. If you have had any interesting experiences related to these themes and if you have time to write to us, we should be glad to hear from you. Perhaps other teachers might profit from your successful programs.

— Editor



JUNE 1947

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A VISIT TO THE AIRPORT

AN AVIATION UNIT FOR PRIMARY GRADES

INTRODUCTION

If the school is located near an airport or if an airport is easily accessible an actual trip should by all means be arranged. In such a case this unit may be used as an outline guide to activities which the teacher may alter as she sees fit and as situations arise.

If a trip to an airport is impossible this unit may be used in taking the class on an imaginary classroom trip to the airport.

Little children cannot, of course, grasp any complicated or detailed concept about flying. However, they should be as familiar with this mode of transportation as they are with that of trucks and trains and boats.

Pictures are especially desirable in this unit. Such pictures are plentiful (see bibliography) and colorful. Probably some of the children already have collected pictures of airplanes which they will want to bring to class.

MOTIVATION

Providing motivation for the airplane unit should be easy since most children are very much interested in airplanes. Perhaps a picture of an airplane put up on the bulletin board will elicit a discussion through which the unit may be initiated. An air show, or any local news about planes may be used to advantage in introducing the study.

PREPARATION

After the children have been introduced to the study, discuss with them the various uses of airplanes. This discussion will include such points as the following.

1. Airplanes carry passengers.
2. Airplanes carry mail.
3. Airplanes carry other freight.
4. Airplanes are used in wartime.
5. Airplanes are used to take food and medicine to isolated areas.
6. Airplanes are used for exploring. (A fairly recent example of this is the Byrd expedition.)
7. Airplanes are used for advertising purposes (skywriting).
8. Airplanes are used for protection—forest rangers, Coast Guard, etc.
9. Airplanes are used on farms—planting, spraying, dusting.

On the blackboard write these and

any other points that the children think pertinent.

Ask the children if the planes we have today have changed from the first airplanes. Then illustrate this with pictures of the first airplanes and compare them with the planes of today. Show the children pictures of different kinds of airplanes which we use today—mail planes, passenger planes, bombers, and the like. Tell them briefly about Wilbur and Orville Wright and how, in spite of the fact that no one believed flying was possible, the two brothers went ahead with their experiments.

DEVELOPMENT

After the children are in a general way familiarized with airplanes and their uses the trip to the airport, either real or imaginary, is appropriate. Again we must stress the use of pictures, especially if an actual trip to the airport is impossible. Use pictures of hangers, of the airfield itself, the runways, the field lights, and so on.

The following questions give in outline form the general progression of the unit.

The Airfield

1. Is the airfield large? Is it level or hilly?
2. Why must it be?
3. What are the runways?
4. What are the hangars?
5. Are the hangars large?
6. What do the tractors do?
7. What is the gasoline truck for?
8. Is the field lighted at night?
9. How is the field lighted?
10. Are the lights all the same color?
11. Is there a weather station at the airport?
12. Of what use is this?
13. Is there radio equipment at the airport?
14. How is this used?

The People at the Airport

1. Who are the men who fly the airplanes?
2. Who are their assistants?
3. What do the ground radio operators do?
4. What do the mechanics do?
5. Do they have to be very careful in their work? Why?
6. What does a stewardess do?

7. Are there a lot of people working at the airport?

8. Why do you think that there are so many people working there?

9. Would you like to work at an airport?

10. What job would you like to have?

Airplane Vocabulary

1. What do they mean when they say that a plane "taxi" in?
2. What is the cockpit of a plane?
3. What is a plane's "stick"?
4. What is the instrument board of a plane?
5. What does it mean when they say that a plane is "on the beam"?
6. What is a parachute? How is it used?
7. What is a glider?
8. What is a helicopter?
9. What is a seaplane?

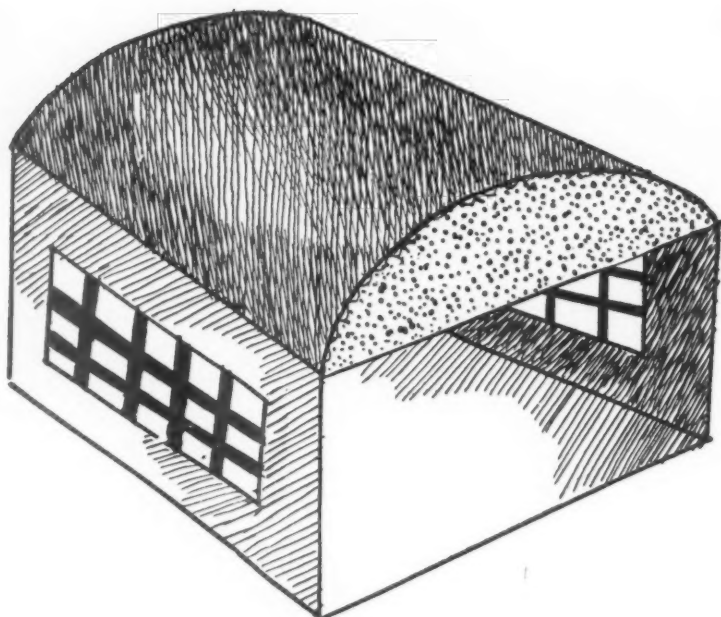
ACTIVITIES

1. Make a sand-table model of an airport.
2. Write a "log" on the trip to the airport.
3. Compile a notebook of pictures of the different kinds of airplanes. Label each picture.
4. Draw and color pictures of planes and the airport.
5. Make up songs and rhythms about the airport and airplanes.
6. Make up stories and poems about the airport and airplanes.
7. Build model airplanes. (This may be too advanced for primary children.)
8. Collect airmail stamps from the U. S. and other countries.

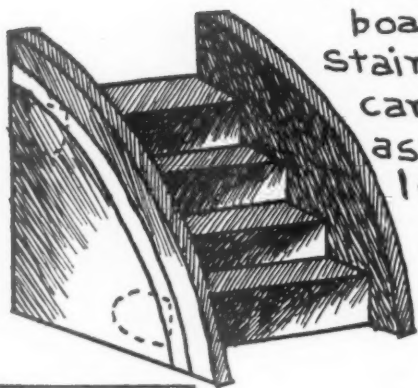
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- Airplanes and How They Fly*, Marshall McClintock (New York: Frederick A. Stokes Co., \$2.00)
- Airplanes, the Work They Do and How They Do It* (Eau Claire, Wisconsin: E. M. Hale & Co., 15c)
- Gliders and Airplanes*, Smith and
- (Continued on page 42)

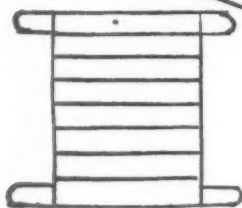
AIRPORT



Hangar: cardboard box with lightweight cardboard sheet stapled to top. Separate pieces of cardboard fill the dotted areas.

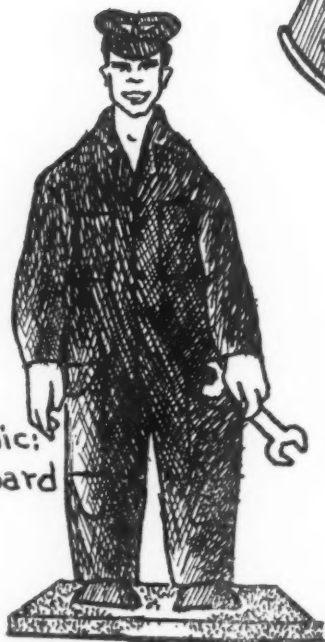


Ramp: heavy cardboard sides.
Stairs: lightweight cardboard folded as shown below left.



Wind sock :
milk carton base. Wired cloth sock.

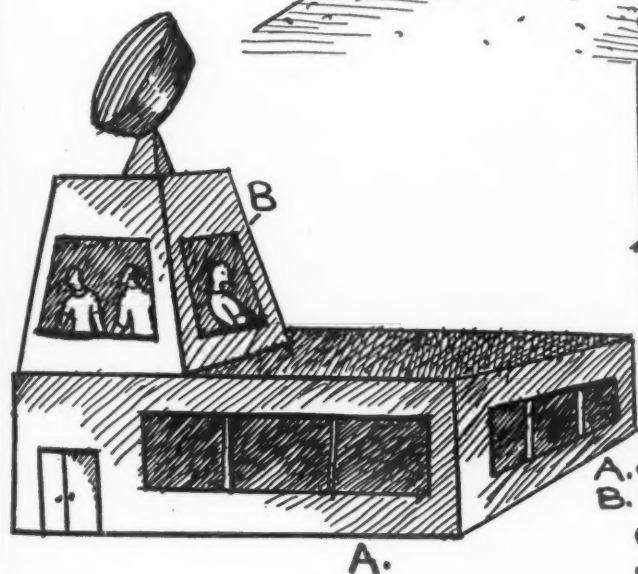
Airport mechanic:
clay or cardboard
figure.



A SAND-TABLE AIRPORT

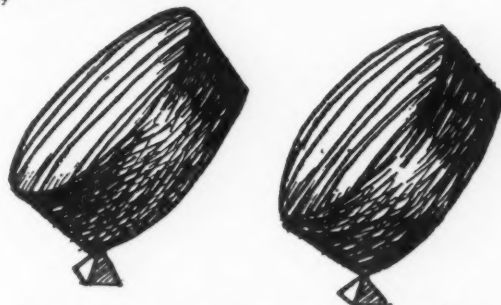
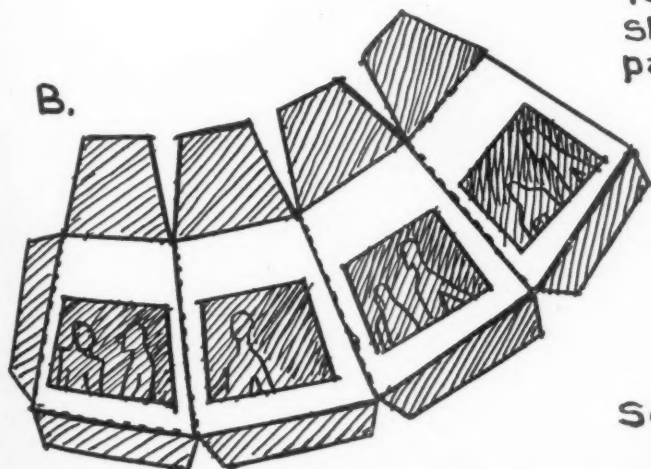
The big project for the airport unit may be the construction of a sand-table model of the airport. We have shown on these two pages suggested models for the buildings and equipment.

These may be modeled from clay or constructed from lightweight cardboard. Some of the children may want to make model airplanes (these may be purchased very inexpensively) to place about the field. Clay figures may be modeled to represent the personnel of the airport.



Fence: pieces of screen with tape over exposed edge

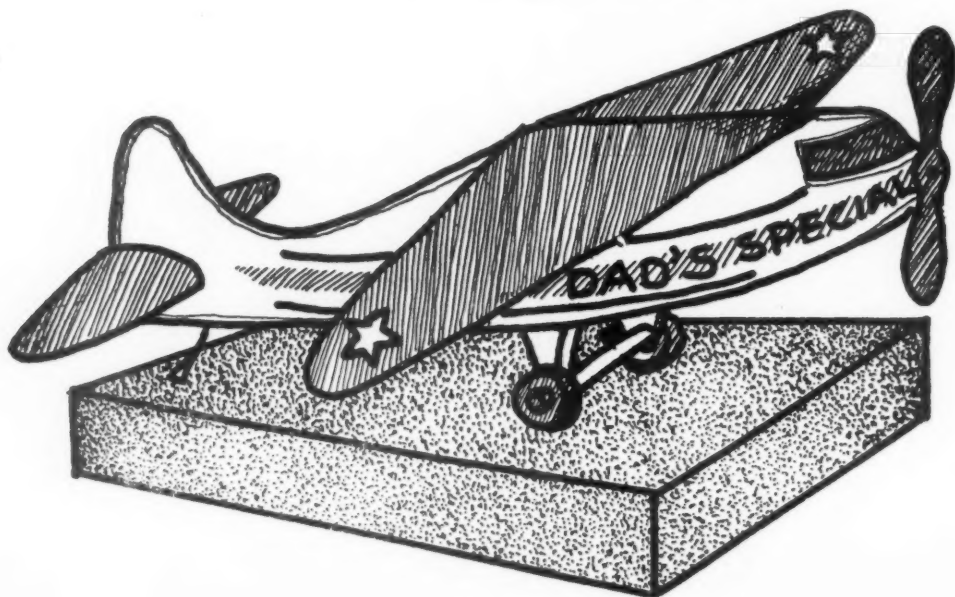
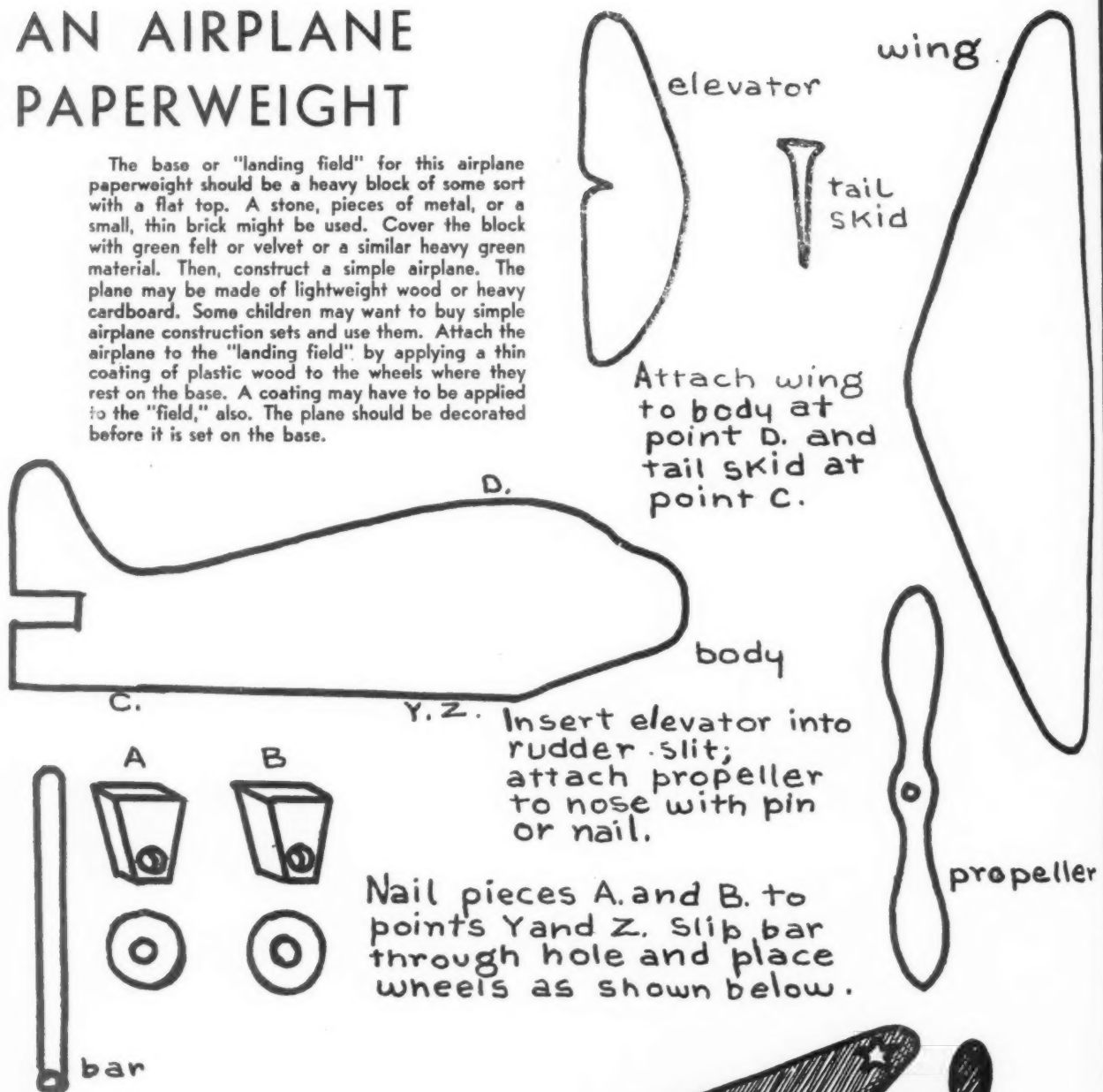
A. cardboard box
B. lightweight cardboard on which observation tower is sketched as shown. Score, cut, paste, and paint.







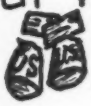


Searchlights: screw bottle caps painted, placed on lumps of clay or plastic wood.






AN AIRPLANE PAPERWEIGHT


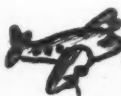




The base or "landing field" for this airplane paperweight should be a heavy block of some sort with a flat top. A stone, pieces of metal, or a small, thin brick might be used. Cover the block with green felt or velvet or a similar heavy green material. Then, construct a simple airplane. The plane may be made of lightweight wood or heavy cardboard. Some children may want to buy simple airplane construction sets and use them. Attach the airplane to the "landing field" by applying a thin coating of plastic wood to the wheels where they rest on the base. A coating may have to be applied to the "field," also. The plane should be decorated before it is set on the base.












A READING GAME

This is an . It is kept in a  at the . This  carries  and . Some  carry  and  and many other things.  have many uses.

The  is a busy place. There are many  there. They take care of the . They also guide the  by .

The  is the man who flies the . His helper is called the . The  is a lady who takes care of the  on the .

The  is a very large place. The  land on wide strips called . Large  light the  at night. This is so the  can see where to land the . A  acts as a beacon to  at night.

The following are the words which are used to fill in the story. The children should guess the words from the pictures and then letter the words. Some words will be used more than once. This activity may be enlarged by having the children make up their own stories and both draw and letter in the words. The teacher herself can extend the scope of the

story by writing it to fit her class's particular experiences.

AIRPLANE - HANGAR - AIRPORT - PASSENGERS - MAIL - FOOD - MEDICINE - PEOPLE RADIO - PILOT - CO-PILOT - STEWARDESS RUNWAYS - FLOODLIGHTS - SEARCHLIGHT.

THE SMILE THAT WAS LOST

A PUPPET PLAY

By MARION G. KRON

SETTING: *Along a country road. Bench center back of stage. Tree may be painted on backdrop.*

CHARACTERS: *Hilarious Homer, clown puppet; Janet, girl puppet; Robert, boy puppet.*

SCENE I: *Curtains part. Homer enters right. Pantomimes looking for something. Shades eyes and looks up in branches of tree, looks on floor, looks beneath bench. Shakes head sadly.*

HOMER: I'll try it again, just once more. *(He does little dance, singing to tune of "My Bonnie Lies Over the Ocean," verse only, repeated once.)*

My name is Hilarious Homer,
The funniest clown ever seen.

I can juggle and sing for your pleasure

And gambol and tumble between.

My smile is so very contagious

You'll catch it as quick as can be,

And I am a friend of the children

And all of the children love me.

(Shakes head again.) It's no use. I won't be able to fool anybody, least of all the children.

(He sits down on bench in dejected pose as Janet enters left.)

JANET: Why, it's Hilarious Homer. *(She goes over and stands beside him.)* What are you doing here?

HOMER *(looking up):* It's a long story, little girl.

JANET: But, Homer, you belong at the circus making all the children laugh. And you sound so sad.

HOMER: That's just the trouble. I won't be able to make the children laugh ever again. You see, I've lost my smile.

JANET: That's silly, Homer. It's right there on your face where it always was. *(She points at Homer's face.)*

HOMER *(also points at face):* Oh, that. That's my painted-on smile. I mean my smile, the real one underneath.

JANET: But won't the painted-on smile do just as well? That's what everyone sees.

HOMER *(shakes head):* Oh no, no. You can't make anyone else happy if you aren't smiling inside yourself.

JANET *(nods):* I see. When I'm cross inside other children don't want to play with me, but when I'm happy we have good times together.

HOMER *(nods in turn):* That's just what I mean. Now you know why I must find my underneath smile. I can't disappoint all the children who are coming to see my performance this afternoon.

JANET: Oh, no. I'll help you look, Homer. When did you miss it?

HOMER: Sometime after yesterday afternoon's performance. Suddenly, it was gone!

JANET: Did you look for it at the circus?

HOMER: No, I didn't.

JANET: Let's start there then.

HOMER: All right. We'll go back to the circus and look, and we can look in all the likely places along the way.

(Homer and Janet walk offstage, right, as the curtains close.)

SCENE II. *Curtains part on same setting, disclosing Homer and Janet sitting on bench, both with heads resting on hands.*

JANET: It's too bad, Homer.

HOMER *(shaking head):* Yes, it is. We looked **everywhere** and asked **everyone!**

JANET: Yes, even the circus animals. It was nice of the hippopotamus to offer to share his smile with you—he has such a big one.

HOMER: It was, but that wouldn't help, I need my own. It's almost time for the afternoon performance. Maybe if we looked along the road that way—*(points and looks offstage left)* why, here comes a little boy down the road. Maybe he has seen it.

JANET *(looking offstage left):* That's only Robert. He won't be any help. He's so disagreeable he won't even say hello because it's too much bother. He **never** smiles.

HOMER: He's my last chance. We'll have to ask him.

ROBERT *(entering left):* Hello there!

JANET *(looks at Homer in surprise):*

He said "hello!"

ROBERT: So I did. Hello!

HOMER and JANET: Hello to you, too.

ROBERT: I'm glad to see you here, Homer. I want to thank you for something.

HOMER: That's fine, but right now I feel very sad. I've lost my smile. Did you happen to see it?

ROBERT: Your **smile?** But it's right there on your face!

JANET *(shaking head):* I made the same mistake, Robert. He doesn't mean that one, **that** smile is painted on. He means **his** smile.

ROBERT: Oh. *(hangs head and shuffles feet)* Well, Homer, I think maybe I borrowed it. *(hastily)* But I didn't **mean** to, really.

HOMER: Well, I'm very much relieved to find out where it went, but how did it happen?

ROBERT: You made me laugh so much when you entertained the children yesterday—

HOMER *(interrupting):* **Now** I remember you! You looked so glum I tried very specially to see if I could make you laugh.

ROBERT: That's right. I saw that everybody liked you because you were so funny and had such a big smile. And nobody liked me. So I decided to start smiling, too. Do you know how I did it?

HOMER and JANET *(leaning forward):* How?

ROBERT: When you sing about your smile, Homer, you say, "My smile is so very contagious, you'll catch it as quick as can be." Well, every time I felt disagreeable I thought about those words and made believe I caught your smile. And there it would be, right on my face! And people started to like **me**, too.

HOMER *(wisely):* That's right. People always like happy children.

ROBERT: But do you know, the last few times I have smiled all by myself, without even thinking of you, Homer.

(Continued on page 42)

A GIFT FOR FATHER

By LUCILLE STREACKER

Here is a useful paperweight and penholder that children will enjoy making as a gift for their fathers on Father's Day.

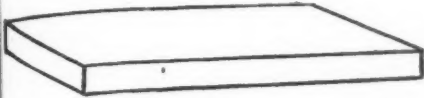
The following materials are needed: an empty, clean ink bottle with the label washed off, a piece of wood about $3\frac{1}{2}$ " x 6", blotting paper the same size, a mussel shell or metal lid, some small sea shells (pretty rocks or even colored and varnished shell macaroni will do), and a teaspoon of clean sand, a bit of artificial greenery, some good glue, and four small brightly colored pictures of fish cut from a magazine. Or children may draw and color their own pictures.

Glue the blotting paper blotter side down to the underside of the wood. This prevents scratches. Then paint or varnish the wood. Put a small dot of glue on the head and tail of each fish and paste them to the glass on the inside of the ink bottle. Spread glue over the entire surface of the inside bottom of the bottle, arrange the small shells or rocks, place the greenery in the center and sprinkle with sand. Now glue the bottle firmly to one corner of the wood.

Glue the mussel shell or lid beside the bottle to hold small objects and pens. Then, place a row of shells or pretty rocks along the front in order to hold pencils and pens in place.



An empty, clean ink bottle with label removed



A piece of wood $3\frac{1}{2}$ " x 6"



Blotting paper same size as wood



Mussel shell and smaller shells

A teaspoon of sand



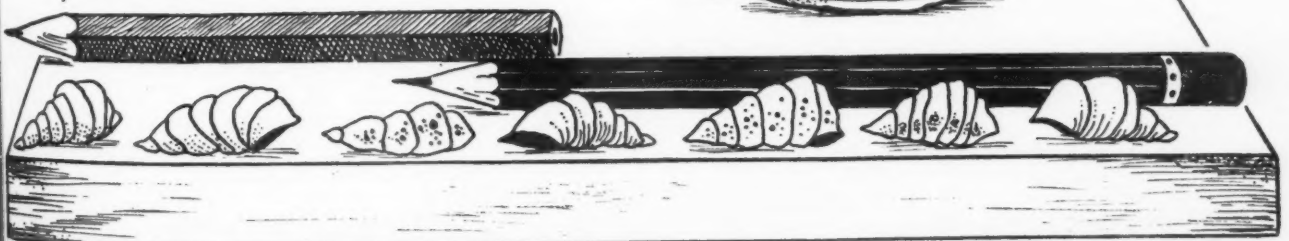
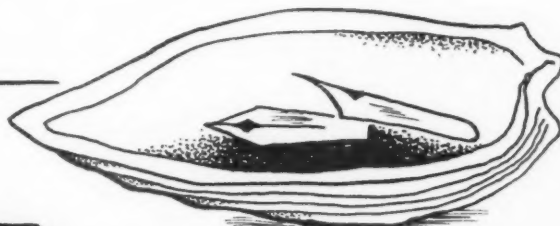
Artificial greenery



Paper fish



Glue



PILLOWS THAT ARE FUN

By DAWN E. OLESON

These funny little pillows are easy to make and lots of fun to own or to give away as gifts. Often you can find all the necessary materials in the scrap bag. Use a large basin or round platter of about 12" or 14" for the pattern. Cut two circles of some plain material such as unbleached muslin.

For the clown a bright, colored print material is used for the cap, nose, and mouth. These should be cut to your own patterns. Be very careful to fold all the edges under and baste on to the pillow where you want them. Then sew them on with black embroidery thread, using the running or the blanket stitch. Outline and embroider the eyes and eyebrows as well.

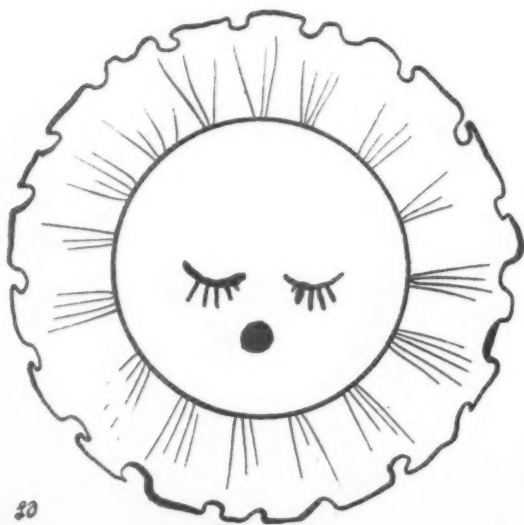
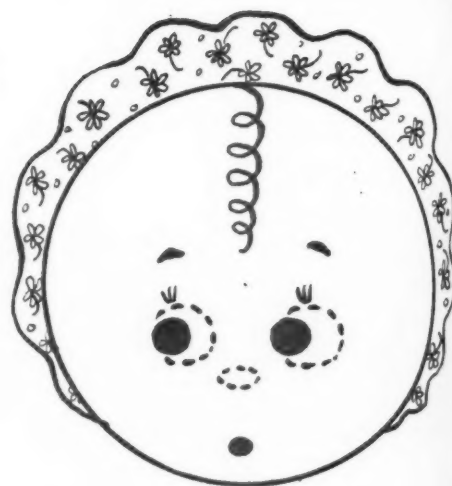
Then, turning the embroidered side face down on the other circle of material, sew the two circles together around the edge with a $\frac{1}{2}$ " seam, leaving a small space at the top unsewed.

Turn the pillow right side out. Cut a two foot long strip of the bright print material, leaving it about 2" wide. Put a narrow hem in one side and shir the other side to make a ruffle. This goes on the pillow to make the clown's collar. Then, stuff the pillow with cotton and sew up the unsewed section. Add a yarn pompon to the clown's cap and he is finished.

The daisy pillow is made in much the same way. It is very pretty when it is made with a brown center, yellow ruffle, and green floss embroidery.

The sunbonnet baby pillow has embroidered features and a ruffle only part of the way around the pillow to form the cap.

Children will think of other designs they would like to make into these pillows. Further suggestions are given in "Using Project Material in This Issue" on page 3.



GILBERT STUART



One of Gilbert Stuart's most famous paintings is the one he did of George Washington showing the left side of Washington's face. This is called the "Athenaeum" head and it is on an unfinished canvas. However, Stuart, who is considered one of America's greatest artists and the greatest portrait-painter of his time, is famed for many of his other works. Among them are portraits of John Adams, Thomas Jefferson, James Madison, John Quincy Adams, and many others including nobility of England and France.

A native of North Kingstown, Rhode Island (he was born December 3, 1755), Stuart studied at Newport, Rhode Island with Cosmo Alexander and went with him to Scotland. After Alexander's death, Stuart returned to America and obtained

many commissions for portraits. In 1775 he went to England where he studied under Benjamin West. After four years, however, Stuart opened his own studio in London. He went to Paris and also to Ireland and everywhere he went he was brilliantly acclaimed.

After five years Stuart left Ireland and came back to America to paint George Washington. His first portrait of Washington, Stuart considered a failure, but Washington sat for him again and it was then that Stuart painted the "Athenaeum" canvas. Original coloring and technique and his insight into character are the outstanding features of Gilbert Stuart's work. He settled in Boston (1805) and died there July 9, 1828.

SCIENCE ACTIVITIES

MAGNETS AND MAGNETISM

By GEORGE C. McGINNIS
PRINCIPAL, THOUSAND OAKS SCHOOL
BERKELEY, CALIFORNIA

"A magic stone was said to have been discovered recently near the city of Magnesia in Asia Minor. With this stone the owner can perform the most amazing feats—."

This might have been the beginning of a front page article in a newspaper in Greece some 2,000 years ago, for it was at this time that the first natural magnet was discovered.

The stone is known to contain large amounts of iron and is sometimes mined for the purpose of extracting iron from it. It is a compound of iron and oxygen and has been named "magnetite" after the name of the city near which it was first found. This rock will attract and pick up small pieces of iron such as iron filings, tacks, nails, and paper clips. Substances which have this property of attracting iron are called magnets. There are some metals which are not attracted to a magnet. These include copper, brass, aluminum, silver, and gold. It was also discovered that a piece of magnetite, if freely suspended from a string, would swing about until it finally came to rest pointing in the same direction each time. From this it was given the name of "leading stone" or "lodestone." It is probably known more widely by the name "lodestone" than by any other.

Some miners on the island of Samotrace found that by stroking a piece of soft iron with lodestone it would become magnetic also. This important discovery made possible the compass.

Sir William Gilbert was the first man to experiment with magnets in a truly scientific manner. He finally decided that the reason a piece of magnetized iron or compass always pointed in the same direction was because the earth itself acted as a huge magnet. We know today that this is true. You can think of the world as having a gigantic bar magnet thrust through the center. One end reaches the surface at the tip of the Boothia peninsula in Canada and the other in the Antarctic region near Ross Sea. These ends of the imaginary

bar magnet are called *poles*. The one in Canada is called the north magnetic pole, and the one in the Antarctic is called the south magnetic pole. See if you can find them on the globe. As you will see, they are a great distance from the north and south geographic poles.

If you have a compass of your own you must be careful to see that when you use it there is no iron or steel close to the compass. Any object which has iron in it will cause the needle of the compass to swing toward it. This makes the needle swing away from the north magnetic pole, and the compass bearing will be incorrect. You will notice that the metal parts of the compass (except the needle) are made of brass or aluminum. These two metals are non-magnetic and will not affect the compass needle in the least.

When a compass is mounted on a ship it is necessary to find the correction of the compass for its bearing in any direction. Even though the mountings of the compass are all brass there are many pieces of iron and steel on the ship. Many modern ships are made almost entirely of steel. There is another correction which you must make for any compass reading. Sailors and engineers are more interested in true north (the north geographic pole) than they are in the north magnetic pole. Take your globe again and get two pieces of string. Place the end of one string on the city where you live. Stretch it tight and place the other end on the north magnetic pole. Now, while holding the first string in place, put an end of the other string on your city and the other end on the north geographical pole. If the two strings are together there is no correction. In this case you must live in Minnesota, Iowa, Arkansas, or Louisiana. If the two strings are not together, the angle they form is the amount of correction which must be made. This correction is usually called a *declination*. If you live in San Francisco, the declination is 18 degrees to the east. To find true

north you must look along a line which is 18 degrees to the *west* of the direction in which the needle points. If you live in Maine, true north is to the *east* of the direction in which the needle points.

What we call the north pole of a magnet is really the north *seeking* pole. It is the pole which points to the north magnetic pole. Every magnet must have at least two poles, one north and one south. Some magnets may have more.

The simplest kinds of permanent magnets are the bar magnets and the horseshoe magnet. The bar magnet is a straight iron bar or rod. The horseshoe magnet has a shape which its name implies. In each case the poles are at the ends of the magnet, one a south and one a north pole. It is interesting to notice that the north poles of two magnets will push each other away or *repel* each other. The same is true of two south poles. But a north and a south pole will *attract* one another. This can be discovered by suspending two magnets from string and holding them close together. From this we can conclude that *like poles repel and unlike poles attract*.

What causes magnetism? We think that the molecules or groups of them in the iron are lined up in orderly fashion in a magnet. We can think of each molecule as a tiny magnet, with a north and a south pole. When the iron is *magnetized* the molecules are lined up so that all the north poles are pointing in one direction and all the south poles in the other. When the iron is *not magnetized* the molecules are not lined up and are pointing in all different directions.

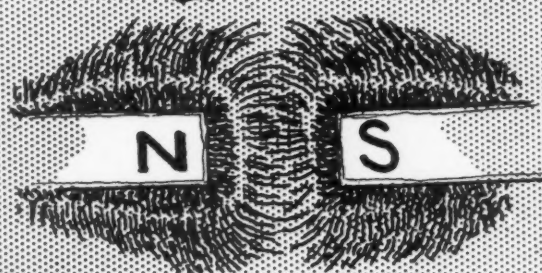
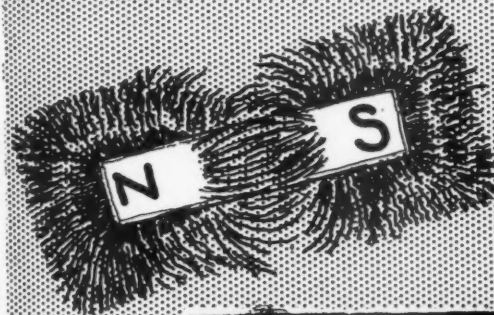
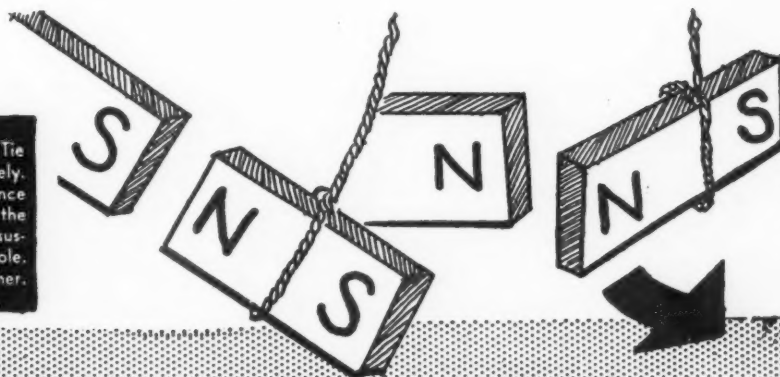
Let's magnetize a steel knitting needle by stroking it with a permanent magnet. Hold the north pole of the magnet against the needle and starting at the middle stroke toward one end. *Stroke the needle in one direction only.* Always starting at the middle and stroking toward the same end. Now place the

(Continued on page 47)

EXPERIMENTS

MAGNETS ATTRACT AND REPEL

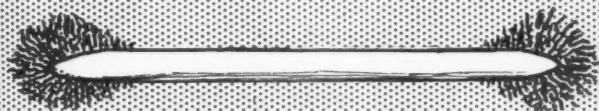
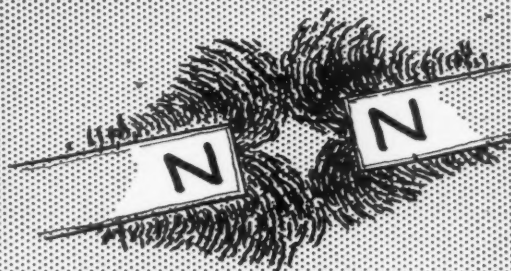
Suspend one bar magnet from a piece of string. Tie it in the middle so that it balances and swings freely. (CAUTION: Be careful not to drop the magnets since this will cause them to lose their magnetism.) Hold the pole of another magnet to one of the poles of the suspended magnet. See what happens. Try the other pole. The two "N" or two "S" poles should repel each other. An "N" and an "S" pole should attract one another.



MAGNETIC FIELDS

Place a piece of paper over a bar magnet. Sprinkle some iron filings on the paper over the magnet. Tap the paper gently if necessary to make the iron filings line themselves up. The pattern formed by the iron filings shows the appearance of the magnetic field. Do the same with a horseshoe magnet.

Place the "N" pole of a magnet about 1" from the "S" pole of another magnet and repeat the performance. Place two "N" poles about 1" apart and try it again.



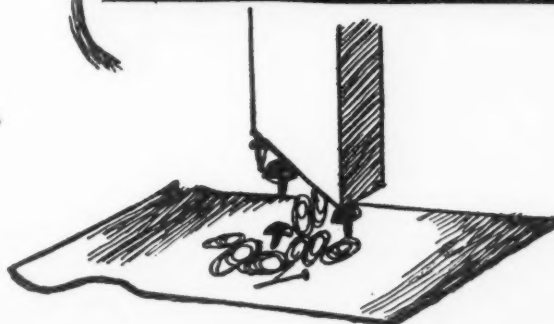
MAGNETIZING A NEEDLE

Magnetize a steel knitting needle as explained in the article. See if it will pick up some iron filings. See how it affects the needle of a small compass.



MAGNETIZING IN THE EARTH'S FIELD

Secure an iron bar or rod about 2 or 3 feet long. Reinforcing steel will do very well. Hold it in the direction of the compass and strike it quite hard on the end with a hammer. See if the iron bar will pick up iron filings.



MAGNETIC INDUCTION

Try picking up small pieces of iron or iron filings through a piece of paper or thin glass. Place the magnet on one side of the paper and the object on the other.

Try picking up paper clips with a magnet under water.

LEARNING ABOUT BEETLES

A NATURE UNIT FOR INTERMEDIATE GRADES

I. What are beetles?

The *Encyclopaedia Britannica* defines beetles in this way: "Insects possessing horny wing cases. Used to denote cockroaches as well as true beetles."

This definition does not, however, give much hint as to the amazing characteristics of beetles which make a study of them so fascinating and rewarding.

II. How do beetles differ from other insects?

The scientific name for the beetle family is Coleoptera and there are approximately 195,000 different species of them. This makes them the largest single order of creatures in the entire animal kingdom. Some of the largest beetles grow to be 7" or more in length, while the smallest are an almost microscopic 1/50" long.

At one time all beetles flew, having four wings for this operation. However, as it turned out, two wings were quite enough and so the extra two wings gradually (over a period of many thousands of years) developed into the hard, protective wing case. It is this wing case, or the two extra wings which hardened, that make beetles so shiny. The filmy black wings by which the beetle flies are folded beneath the case when the beetle is at rest.

Many beetles have stopped flying altogether, the common ground beetle being an example. Beetles which do not fly depend on their legs, of which there are six, and those which do fly can also use their legs. Some of them, such as the whirligig beetle, can swim.

Another distinguishing characteristic of beetles is their powerful jaws. Whereas bugs eat by sucking, beetles eat by chewing. Sometimes these jaws grow into strange and frightening shapes and so serve a double purpose, for not only are the jaws used for catching and eating food, but they oftentimes frighten away birds which might otherwise make a meal of the beetle.

Most beetles have two eyes which are easily noticeable, and some species have others besides these two. These other eyes are harder to see.

Beetles also have two long, slender, and very sensitive antennae or feelers.

Since no ears can be found on them (and it has been proved that beetles can hear), some scientists are convinced that these feelers also act as the beetles' ears. It is by means of the feelers that beetles communicate with one another. However, some species also communicate with one another by lights. An example of this kind of beetle is the firefly which you may not know is a true beetle.

III. Where do beetles live?

It would probably be easier to name the places where beetles don't live, because they do live almost everywhere—in the ground, in the sand, in trees, on plants, in houses, in other animals, in salt water, in fresh water, in shrubs and bushes—it's hard to imagine a place that wouldn't make some species of beetle a very nice home.

IV. What are the stages of a beetle's life?

Mother beetles are usually very careful to provide in advance for the food supply of the young beetles. She lays her eggs near a good supply of food, the supply depending upon the species of beetle.

When the beetles hatch they are called larvae and they are nothing more than little grubs or worms. Some species of beetles stay in this stage only a few weeks, while it takes others several years to advance to the next stage which is called the pupa stage.

The pupa stage is when the beetle forms about himself a tough, outer shell in which he stays for a rest. From this shell the beetle emerges—the time depending again on the species—as a full-grown beetle.

V. Some different kinds of beetles

Some beetles are very helpful to man while others are equally destructive. The following are some of the different kinds of beetles (obviously we can include only a very few) and some interesting facts about them. See the beetles illustrated on page 19.

Beetles have many enemies and consequently must have many ways of protecting themselves. Some of them rely on protective coloration. One little beetle is often called the bombardier.

When attacked by an enemy this beetle simply stands its ground and then when the enemy is almost upon it it discharges drops of a fluid which quickly changes into a poison gas. While the enemy is involved in this the beetle runs and hides.

The whirligig beetle which you can see skittering about on the surface of ponds has one of the cleverest defenses against its enemies. When danger appears the whirligig simply catches a bubble of air under his wing covers and dives deep under the surface of water where he can remain until the danger is past.

The ladybug (or ladybird) beetle is one of man's most helpful beetles, for it feeds on all sorts of destructive insects. She is very astute insofar as when disturbed she will hold up her legs and drop as if dead, playing possum for at least a minute or two.

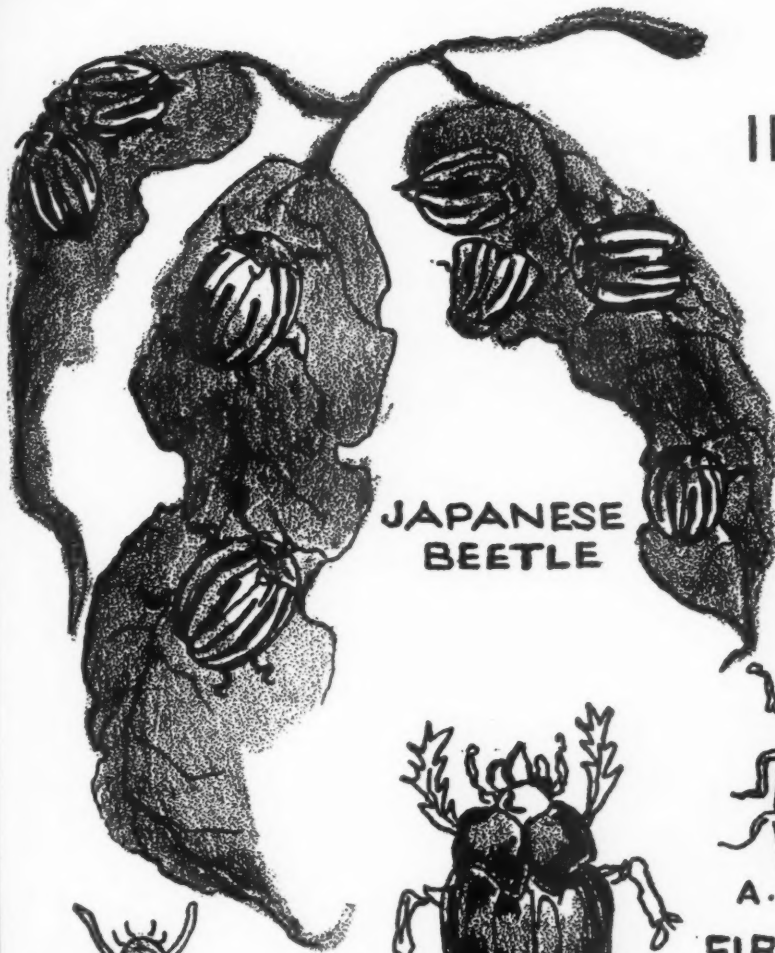
On the other hand we have one of the most destructive of all beetles: the Japanese beetle. This little monster destroys over \$7,000,000 worth of flowers, fruits, vegetables, grass, and many other crops a year. These beetles were brought into the United States over 25 years ago.

In wartime these beetles were especially dangerous because they easily could have ruined the turf on airfields and thus have caused dusty landing strips. Civilian warfare on these beetles had to wait while the army used special defense poisons for this purpose alone.

Superstitions surround beetles, too. For instance, one kind of beetle is popularly called the "death watch" beetle. This particular beetle likes to make its home in old wood. Often it tunnels into old houses. It taps its hard head against the walls of its tunnel in order to let its mate know where it is. Naturally, this is rather a strange sound to hear in the dead of night and people who did not know that beetles were the cause of the sound decided that it was a supernatural sign.

The scarab beetle was regarded by the ancient Egyptians as symbolic of immortality. This insect was sacred to the sun god and has even been found mummified. The image of this beetle was widely used as an ornament.

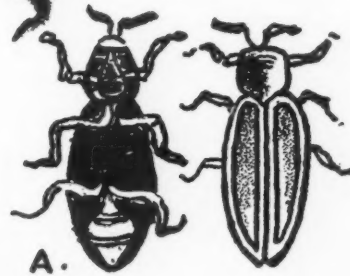
BEETLE ILLUSTRATIONS



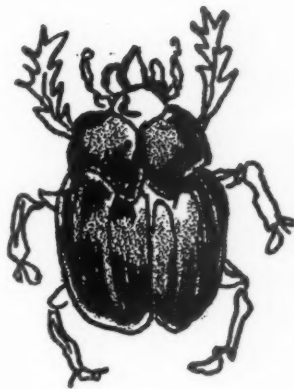
**JAPANESE
BEETLE**



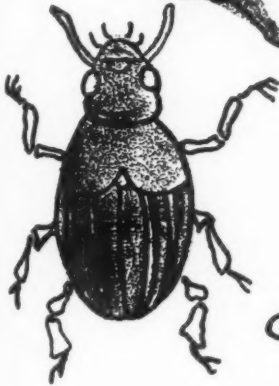
LADYBUG



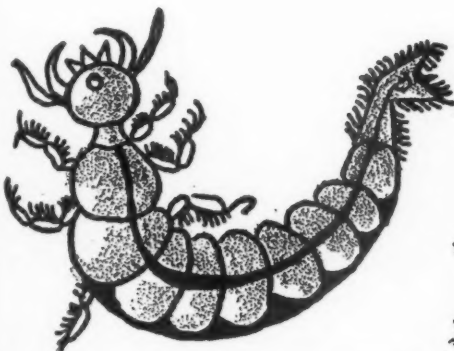
**FIREFLY—A. UNDERSIDE
VIEW SHOWING THE LAMP**



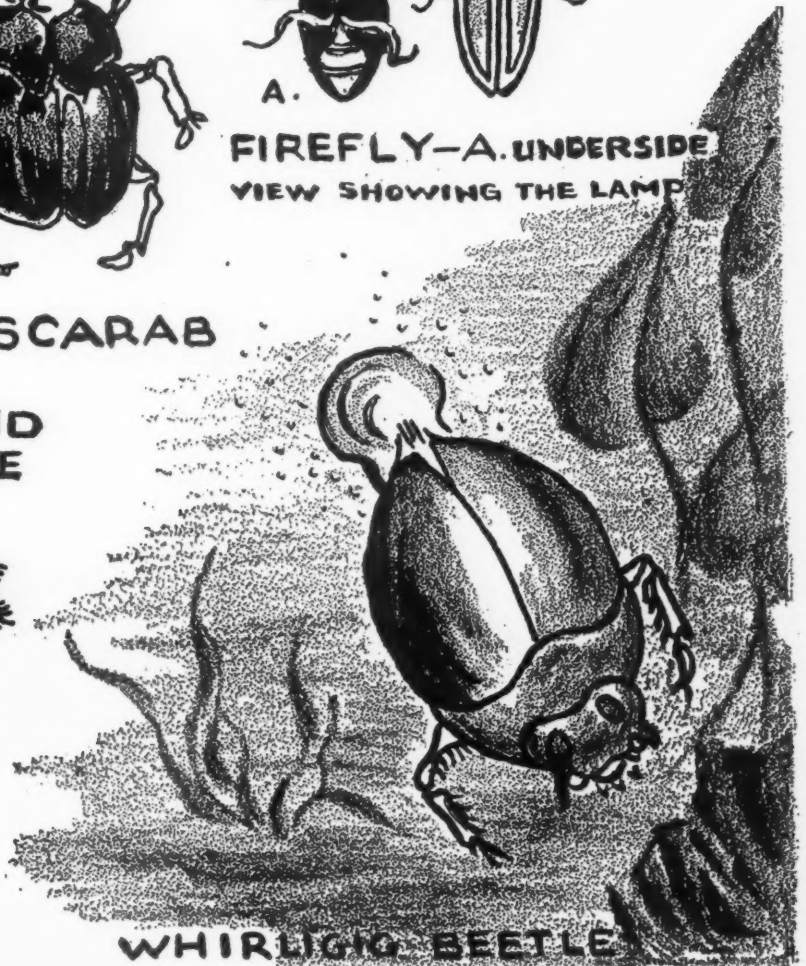
SCARAB



**GROUND
BEETLE**



**A LARVA OF THE
WATER BEETLE**

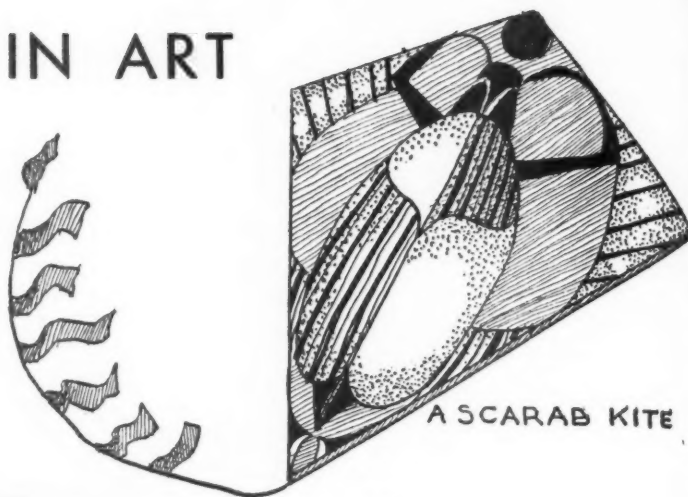


WHIRLIGIG BEETLE

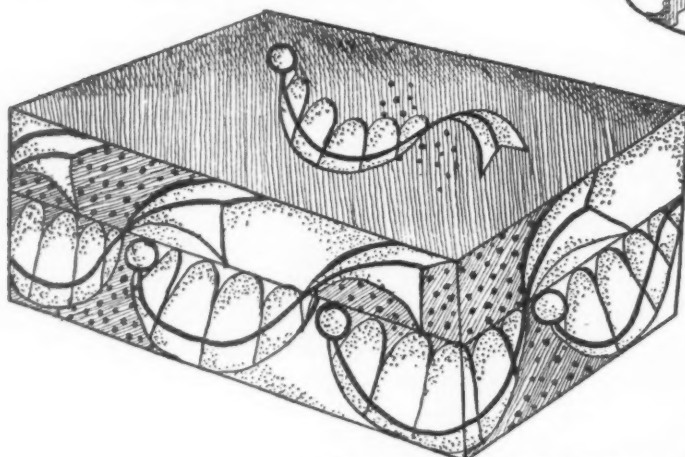
BEETLE DESIGNS IN ART

Beetle designs have long been used in art. It is well known, for example, that the ancient Egyptians made the scarab one of their most characteristic designs for jewels. By utilizing bright colors the children can make from the strange and great variety of beetle shapes unique decorations for borders, notebook covers, and other classroom projects such as flowerpot covers, block prints, kites, etc.

On this page we have suggested decorative possibilities. Luminous paints and gold and silver paints are excellent to use on such designs.



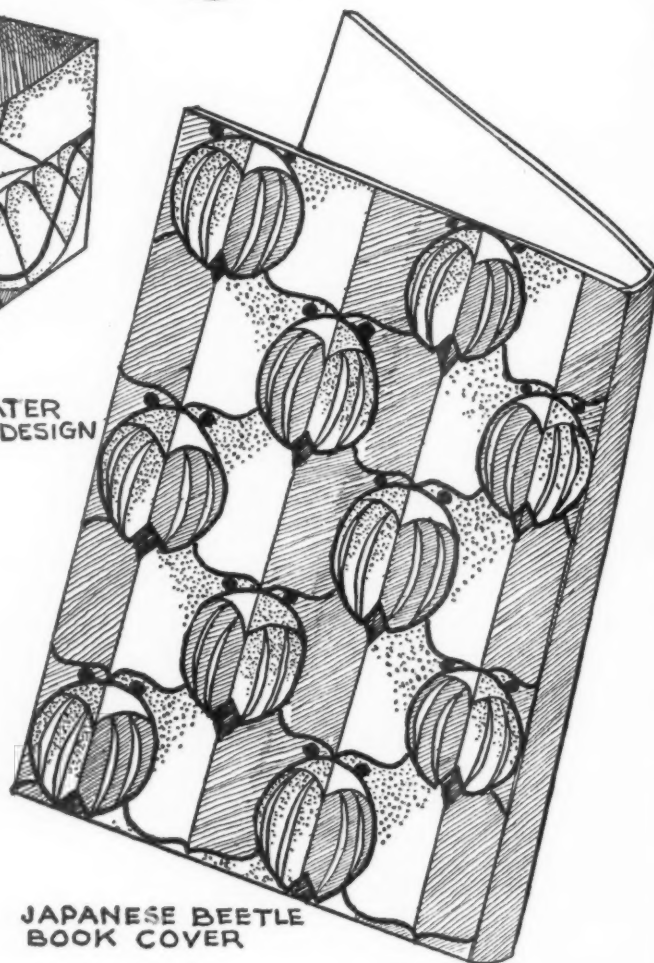
A SCARAB KITE



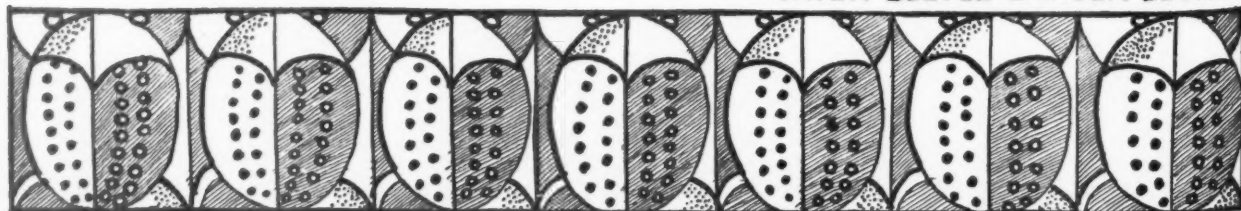
LARVA OF THE WATER BEETLE FORMS THIS DESIGN



PARTS OF THE BEETLE MAKE GOOD DESIGNS. THIS ONE USES PART OF THE BACK AND JAW.



JAPANESE BEETLE BOOK COVER



WATER BEETLE BORDER DESIGN

TEACHING MUSIC IN THE GRADES

CHECK UP ON YOUR ACCOMPLISHMENTS

By LOUISE B. W. WOEPPEL
ASSISTANT PROFESSOR OF MUSIC
DANA COLLEGE
BLAIR, NEBRASKA

The school year is over, or nearly so. Your music classes have gone with the memories of their favorite songs still ringing in their ears. Have you accomplished everything you hoped to do?

If you are inclined to feel discouraged in retrospect use the following questions as criteria for evaluating your achievements. You may find yourself a greater success than you thought!

1. Has your class learned at least 35 songs this year? This is merely one song a week.

2. Have all the group acquired better control of their voices? If they can sing with comparatively greater ease, clarity, and accuracy, you have accomplished a great deal.

3. Does the class repertoire include a variety of songs? If you have taught seasonal, topical, and patriotic numbers as well as the typical study songs, you will have supplied the needs of your group for variety and correlation.

4. Have you included art songs, at least one a week? Even primary youngsters can and should learn songs of lasting beauty and worth.

5. Does your class enjoy the music period? If eyes brighten and the atmosphere radiates vitality and pep when music class time arrives then you may be sure that the class anticipates it with delight.

6. Has your group consistently enjoyed the listening hour, or whatever you call your music appreciation period.

7. Has your group grown in its appreciation of music as a whole? Avoid setting an arbitrary objective in evaluating their development. If the taste of the group as a whole has improved and matured, you should feel satisfied.

8. Does your class correlate class activities with outside interests? This is difficult to determine, but there are several items which indicate such correlation. Do the children tell you when they have heard "school music" presented either for listening or learning

at home or elsewhere? Are they interested in local or living musicians? Do they ask questions about compositions or instruments heard outside of the classroom? Do they suggest learning songs to be used at the various youth organizations in the community? Do they ask to borrow school music for club use? Do they ask for your advice and assistance in the selection of music for church, lodge, or club?

9. Does your group ask to take home their music books so that they may sing or play the songs learned? Do they wish to "sing it to mother" or "teach it to little sister" or "use it when we play school"? All these indicate that music has been accepted as a delightful hobby for leisure hours.

10. Do your students show a broad understanding of music? Several guideposts in determining this are:

a. Are they interested in hearing both vocal and instrumental music at school and elsewhere?

b. Are they interesting in performing both instrumental music and vocal music?

c. Do both popular and standard music appeal to them during your listening hour?

d. If they are older students, do they show interest in living musicians of note: performers, conductors, and composers?

e. Do they voluntarily read library books on musical subjects?

f. Can they recognize the relationship between music and the other fine arts? If your pupils show musical curiosity and breadth of interest compatible with their ages and musical levels, they will evince it in one or more of the above ways.

Suppose you are obliged to say a regretful "no" to one or more of the main questions I have listed. In that case, substitute new materials, new methods, or both! Music teachers should never permit themselves to get into a groove, either in the choice of

materials or in the methods of presentation. Try a few experiments. The following are some suggestions you may want to consider.

1. Teach topical songs in the related class. Teach health and safety songs in the health and safety classes; learn songs from other lands when studying those lands in social studies classes. Then the music period may be used for theory and sight reading.

2. A program of songs planned for the year may be your best means of attaining a balanced diet of music.

3. If your class dislikes the music period it may be reflecting your attitude. Lack of self-confidence, of adequate preparation, or skill may so hinder you that you dread the class. If you feel incapable of teaching the music expected in your class, take some work in that field this summer.

4. If your class has not enjoyed the music appreciation activities ask yourself whether the compositions were too difficult for them to understand, too abstract, too much of one type. Perhaps the group needs more of a build-up or preparation for the music chosen.

5. If your group does not correlate music with other school subjects, get in the habit of mentioning such relationships. Suggest that they listen at home to specified musical radio programs. Later ask for comments on the program. Encourage pupils to "talk shop" with local musicians when the latter have the time to spare.

6. Encourage your class to think of music, especially school music, as a hobby. Scrapbook fans may enjoy collecting musical data about composers, performers, instruments, history, and the like. You might have a class scrapbook of musical data to which the entire class contributes.

7. During the summer, try to hear a lot of the music that you yourself enjoy. That will give you a treasure trove upon which to draw in the school year ahead.

SIGURD AND THE DRAGON FAFNIR

ADAPTED FROM STORIES OF THE VOLSUNGA SAGA

By AMY SCHARF

Sigurd lived with his mother, Hiordis, and his foster father, King Alf, who ruled Midgard. He had lived there ever since he could remember, for when he was only a baby his father, Sigmund of the Volsung, had been slain in battle. King Alf, however, loved Sigurd as his own son and had given him every advantage. The race of the Volsungs, Sigurd's family, was mighty but Sigurd grew to a young manhood worthy of them. He was brave and strong and clever, and he was skilled in many arts, as befitted a king's son.

All of these things had been taught Sigurd by a dwarf named Regin. Regin, who was a swordmaker (and it was rumored that he was an enchanter besides) had acted as a tutor to Sigmund.

Regin was a very old man. In fact, he was so old that no man, nor his father, nor his grandfather could remember the time when Regin had not been the swordmaker. And although Regin was very old, he was strong, and he wielded the heavy swords he fashioned on the anvil as easily as any of the king's warriors.

One day as Sigurd sat watching Regin work Regin said to him, "Why is it that King Alf has never given you riches and treasures that are rightly yours?" (Pause for sketch.)

Sigurd was surprised. "King Alf has treated me as his own son and he would give me whatever I asked for. But I have no need for riches."

Regin shrugged his shoulders with pretended indifference. "Perhaps not, but you are a young man now, and you don't even have your own horse. You go about like any common lackey."

Sigurd was thoughtful. "I suppose so," he said. Then he jumped up. "Very well, I shall go right now and ask King Alf for a horse of my own. You shall see that he denies me nothing."

The boy hurried away and Regin, a sly smile twisting his lips, stood looking after him.

(Pause for sketch.)

As Sigurd had said, King Alf was glad to grant his foster son's request,

and Sigurd chose for himself a beautiful gray horse whose pace was fast and whose foot sure. He rode at once to the swordmaker's anvil.

"You see," Sigurd said dismounting, "isn't he a beauty?"

Regin looked at the spirited animal and nodded. "You have chosen well."

(Pause for sketch.)

"But then," Regin said turning away, "you can hardly call yourself worthy of such a horse when you have no sword with which to defend king and country. And of course," he added, lowering his voice and looking about to see that they were not overheard, "if you had a sword I should be able to tell you of a great treasure, the winning of which would bring you honor and fame."

"Treasure?" Sigurd asked. "You know of a great treasure? Where is it? Who guards it?"

"Well," Regin said, "the treasure is guarded by a loathsome creature named Fafnir. It is not far from here, just over on the wasted land of Gnita-heath. The fire from Fafnir's throat and nostrils has destroyed the land."

"But such is no concern of mine," Sigurd interrupted. "My prime consideration is the making of war on the slayer of my father."

"But Gnita-heath is part of the kingdom of Alf. It is your duty to destroy the monster who lays waste that land," Regin protested.

"Why do you egg me on to do this?" Sigurd asked Regin.

"Perhaps this story will explain," Regin said. "You see, my father was Hreidmar, king of the dwarfs, and he was very wealthy. Fafnir was the greedy oldest son; Otter was the second; I was the youngest. Otter was a great fisherman and during the daytime he wore the semblance of an otter."

"One day Otter was slain and my father caught the slayers and said that they could not go free unless they filled the otter skin with gold and then covered it with gold. Loki, one of the slayers, took by force the hoard of a dwarf named Andvari, and he also took

Andvari's gold ring. Andvari placed a curse on the treasure and one on the ring.

"The gold filled and covered the otter skin, except for one hair and this they covered with the ring. But the curse was then upon our house and that very night Fafnir slew my father in order to get the treasure and I was driven out. Fafnir fell to brooding over the treasure and so in order to guard it better he turned himself into a huge, terrible worm."

Sigurd shook his head. "Your family was indeed an evil one and you have lost a great deal, so, make me a sword and I shall go to kill Fafnir."

But every sword that Regin made, Sigurd was able to break until at last Sigurd went to his mother and asked her for the broken pieces of Gram, his father's sword. Sigurd took them to Regin who made Sigurd a sword so great that with a single blow Sigurd cut the anvil in two without harm to the sword.

(Pause for sketch.)

"Now," said Regin, "we shall go to Gnita-heath."

When they got to the heath they could see how the land had been destroyed and they could also see the tracks of Fafnir where he went down to the river each evening to drink.

"What you must do," Regin instructed, "is to make a pit in the road over which Fafnir goes. Hide in the pit and when he passes over you strike him to the heart. And now," said Regin looking around nervously, "I'd better go and hide somewhere."

Sigurd dug the hole and as he dug an old man with a long beard came by and asked him what he was doing. Sigurd told him and the old man frowned. "Whoever gave you such advice wished you harm. Dig not one but many pits and when you have killed the worm flee to the farthest one or his poison blood will fall on you and kill you." And then the old man vanished.

Sigurd thought this advice sounded

(Continued on page 42)

SIGURD and FAFNIR



SPOOL CIRCUS

By ELMA WALTNER

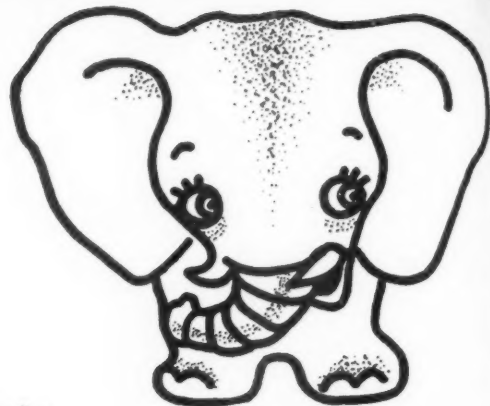
What child does not enjoy watching a circus parade? And what child would not enjoy making a group of animals that can stage a parade up and down the length of a circus sand table or along the window sills of the classroom?

For each animal in the parade an empty thread spool will be needed. These are for the bodies of the animals.

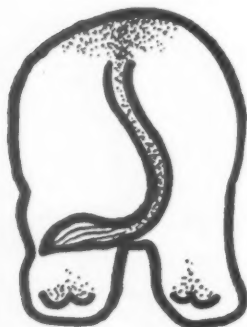
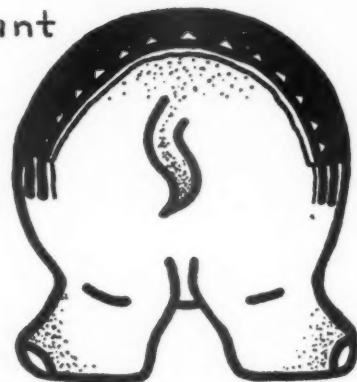
Trace the patterns on light cardboard. Color and cut out. Color the spools that are to be used to match the animals whose bodies they form. For example, the zebra should have stripes, the spool for the giraffe should be spotted, and so on.

Glue the front and the back of each animal to the ends of a spool. Before the glue has had a chance to harden, make sure that the four feet are in line so that the animals will stand solidly. To determine this, set the animal on a flat surface and then adjust the feet until they are level. Set the animal on end to dry so that the weight of the spool will not cause it to slip out of position while the glue is still wet.

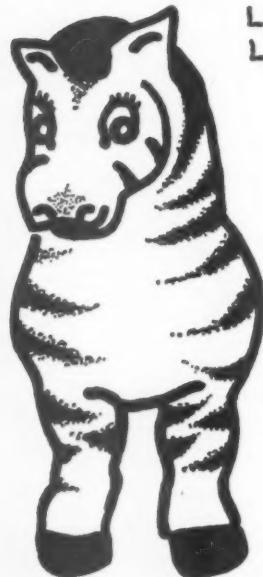
All sorts of domestic animals may be designed as well as the ones shown for the circus parade. To design new animals, trace around the end of a spool and draw the front and the back of the body around these circles to be sure that they will be the correct size to fit the spools which will be used as the bodies.



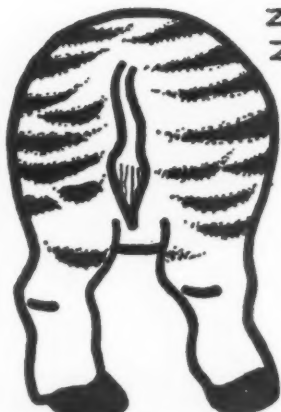
Elsie
Elephant



Lester
Lion



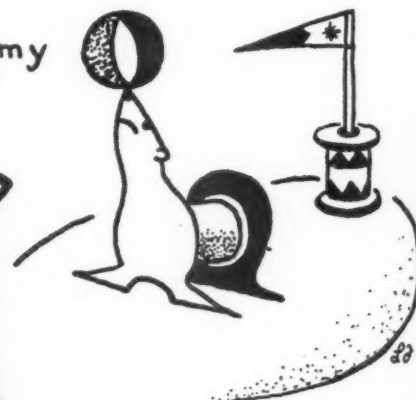
Zeke
Zebra

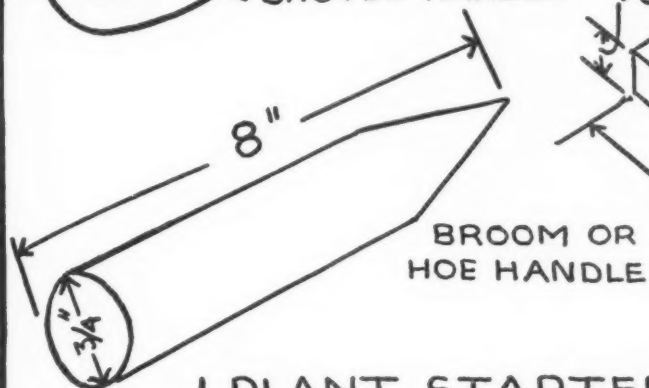
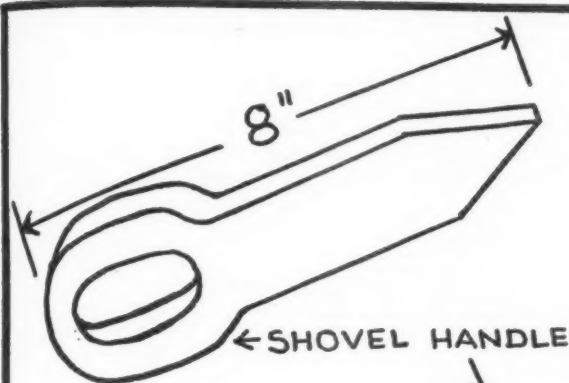


Gerry
Giraffe

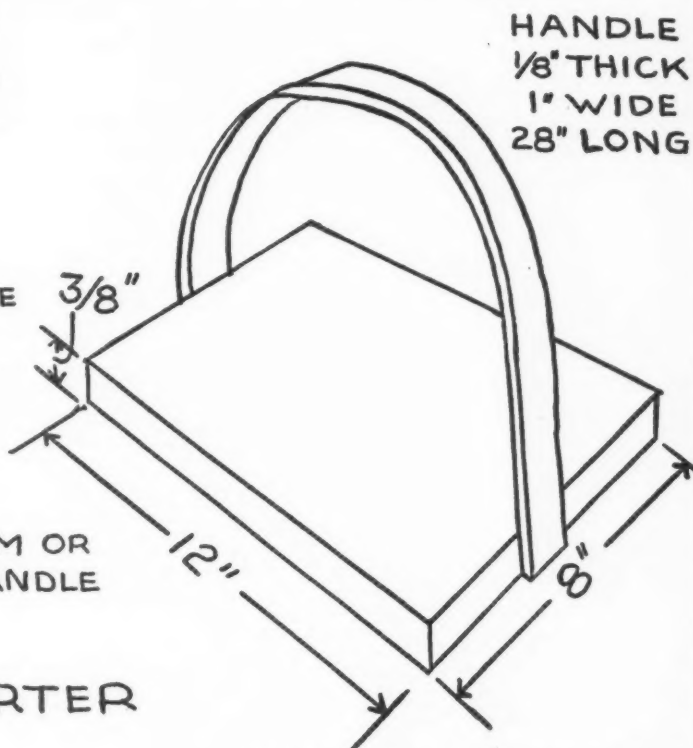


Sammy
Seal





1. PLANT STARTER



2. PLANT BASKET

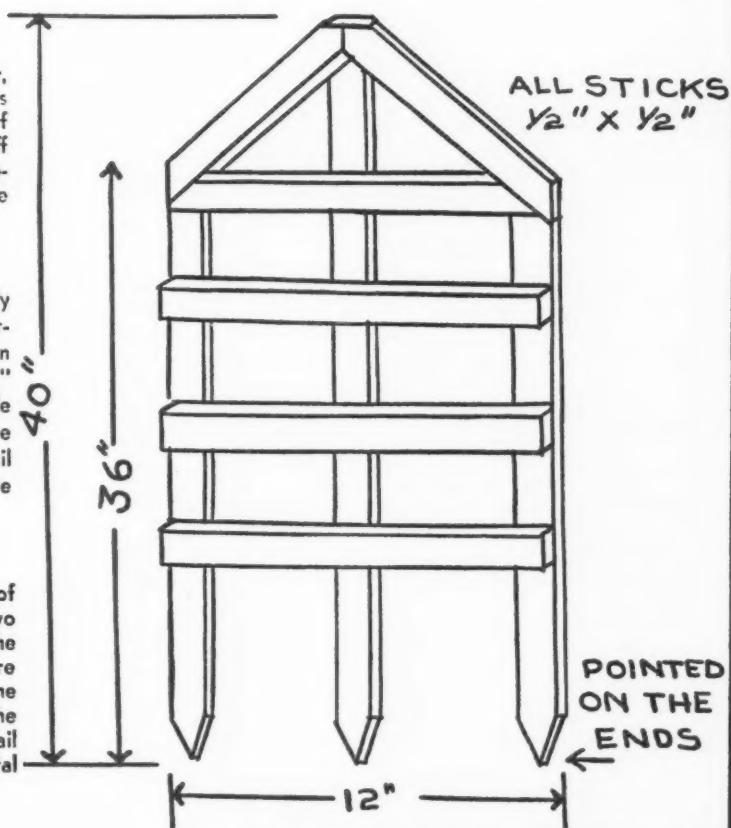
GARDEN ACCESSORIES

By JEROME LEAVITT

PROJECT 1—PLANT STARTER. A plant starter, used to make the starting holes for various plants such as tomato and cabbage, can be made one of two ways. A broken shovel handle can be cut off about 8" from the end and the round part sharpened with a knife or plane. A broken broom or hoe handle can be cut 8" long and sharpened.

PROJECT 2—PLANT BASKET. A very handy plant basket for carrying plants around in the garden can be made so that later in the season it can be used for carrying cut flowers. The base is of $\frac{3}{8}$ " or $\frac{1}{2}$ " wood, 8" wide and 12" long. The handle is $\frac{1}{8}$ " thick, 1" wide, and 28" long. After the base and handle are cut, sandpaper smooth and nail the handle on the base with ordinary nails. Give two coats of shellac for protection.

PROJECT 3—ROSE TRELLIS. All the pieces of this rose trellis are made from $\frac{1}{2}$ " x $\frac{1}{2}$ " wood. Two 36" pieces and one 40" piece are required for the uprights. Four 12" pieces and two $8\frac{1}{2}$ " pieces are needed for the horizontal members. Sharpen one end of the uprights to facilitate driving in the ground. Cut the two top members to fit and nail in place. Next, space and nail the four horizontal members. Sandpaper smooth and paint green.



3. ROSE TRELLIS

CLOSING DAY ACTIVITIES

SUGGESTIONS FOR ALL GRADES

The following are suggestions for closing day and we have included material for all grades and for schools where no particular closing day activities (plays or programs) are planned as well as for those where such activities are an integral part of the school year. Naturally, the use of these suggestions depends on the class and the facilities of the school.

SIMPLE CLASSROOM PLANS

The last day of school can be either a day of impatient, restless children who are bored and don't see why they must sit through another day at school before they are "free" for the summer; or it can be one of fun, and interest, and plans, leaving the children with a pleasant memory of school as well as constructive plans for the summer. It depends upon the teacher and her ability to make every day, up to and including the last, count toward the constructive educational experiences of her pupils.

Very young children in the primary grades will especially enjoy the last day of school if it is made more or less a play day. Games and songs are appropriate at this time. The games should not be of too active a nature—word games, guessing games, and so on. A part of the day might also be devoted to a discussion of the children's plans for the summer. Each child might tell what he would like to do during his vacation, or any trips that his family has planned, or a summer camp which he may attend, and so on. Everyone in the class should have a chance to participate in the discussion.

If there is still time after the games and vacation discussion, the teacher might talk to the children about what they liked about school during the year. What phases of study particularly interested them? What activities did they like especially and why? If children are encouraged to talk about their school work, frankly and seriously, they will naturally take more interest in it. They will feel that they have a real, working part in the curriculum and less as if school is something that is forced upon them and over which they have no control.

The teacher might also talk to them, in a general way, about what they will be learning next year, and tell them about any activities which she believes will be of special interest to them.

Discussion of school work both past and future is desirable in the intermediate and upper grades, also. (It cannot be emphasized too strongly that children must be made to feel that they have a part in the planning and organizing—as they should have.) Here again word games, spelling matches, in addition to geography and arithmetic games, are desirable.

But with intermediate and upper grade children the discussions of their plans for the summer are doubly important. Children in the primary grades are still quite young and usually their parents keep rather close track of them and they are at home or in the immediate neighborhood of home most of the time.

However, children in the intermediate and upper grades are at an age when they begin to "sprout out" as far as their friends and their activities go. It is important that they be encouraged and guided in filling their leisure with wholesome and constructive play. Encourage them in their hobbies, in joining clubs such as the Boy and Girl Scouts, Camp Fire Girls, Brownies, Cub Scouts, 4-H Clubs, and so on. Discuss with them the various activities in which they might like to engage—gardening, reading, their hobbies, keeping special diaries of their activities, starting their own nature museums of rocks, plant specimens, and so on. (See June, 1946 *Junior Arts and Activities*, "Variations For Vacations.")

PLAYS AND PROGRAMS

Plays and programs, to which the children invite their parents and friends, may be simple or elaborate, depending upon the facilities of the school and the time the teacher has to devote to the preparation of such activities. However, it should not be overlooked that simple, easily done plays and programs are as effective and many times are more charming than elaborate affairs where both teacher and students are rushed

for the time to prepare and worried about costumes, scenery, and the like.

Whether a single room presents the program or whether the whole school takes part in one large program, one of the best ideas is to review the school year.

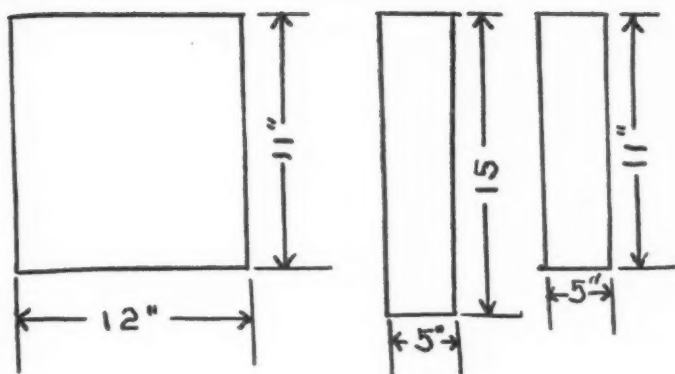
For instance, if the whole school is partaking, let each class present some favorite activity—a dance, original songs and rhythms, original poems, favorite games, a display of some of their material with a narrator explaining the work. In this way you are sure to have a variety of "stunts" for your program.

Older children might like to make up original words for popular songs. These words might tell about the school year—when they first met the teacher, outstanding events of the year, going on to the next grade, and so on. Have part of the group sing the words while another part acts out the words in pantomime.

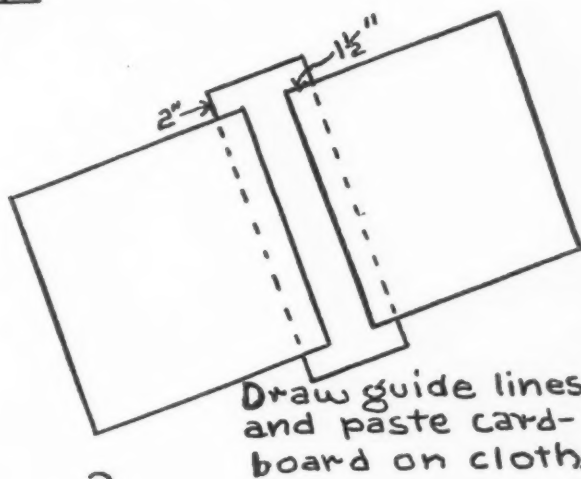
If, during the year, the children have presented a program which has been a special success, they might present highlights from that program in addition to new material. This has the added advantage that all of the material is not unfamiliar to the children and it will considerably shorten preparation time. In addition, parents and friends will not mind seeing again something that they have especially enjoyed, especially when it is included in a program of reviewing the school year. This type of thing also eliminates the necessity for elaborate costuming.

If a single room is presenting a program for the parents and friends of children in that room a play is good. However, teachers should be careful to select a play in which all the pupils can have a part, otherwise closing day may be a day for "left out" feelings on the part of many of the children.

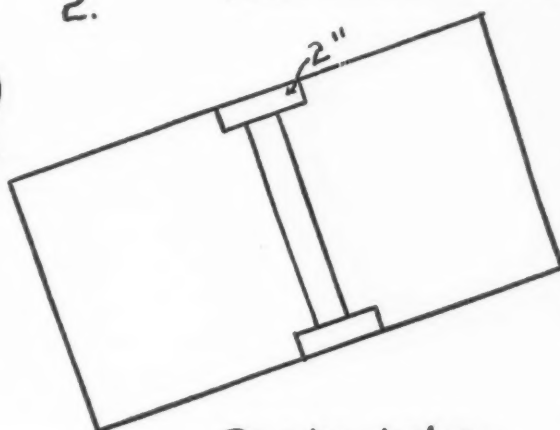
The children might write their own play. It may be based on school activities, on a favorite story or poem, or be a purely imaginative play on a theme in which the class is interested. In this way, too, costumes, properties, and scenery may be kept to a minimum.



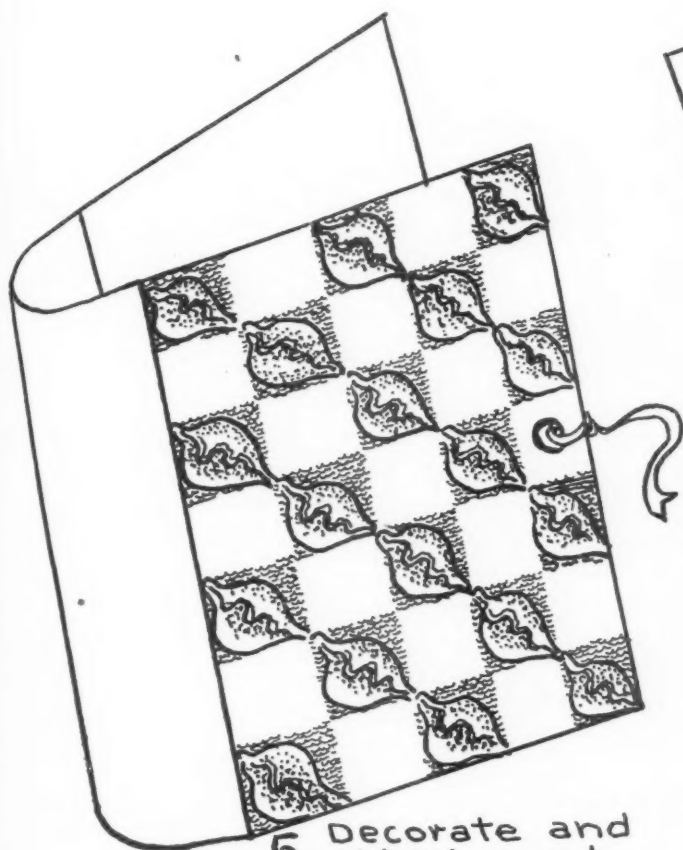
1. Cut two pieces of heavy cardboard and one each strip of binder's linen sizes shown at left.



2.



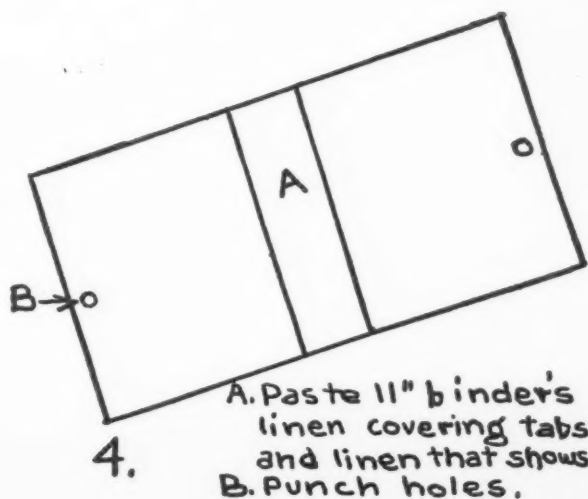
3.



5. Decorate and attach cord.

WORK PORTFOLIO




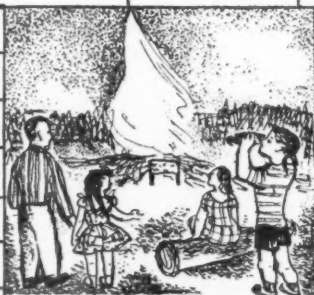


Many uses can be found for this portfolio. It is handy for carrying written work to and from school. It may be used as a filing place for records the children may make of their summer activities. Young artists will find it useful for carrying sketch paper, etc. The portfolio should be large enough to protect ordinary size papers—11" x 14" is a good size. Make it from heavy cardboard or oaktag. It may be covered with oilcloth—secured inside as we have shown—or decorated and then covered with cellophane for protection. Hinge the two covers securely together with binder's tape. Punch two holes near the right edges, as illustrated, so that cord may be inserted for tying the covers.



4.

A. Paste 11" binder's linen covering tabs and linen that shows B. Punch holes.

SUMMER ACTIVITY CHART

This is a chart of possible summertime activities for boys and girls of all grades. The material has been arranged chart-wise for convenient teacher presentation but the following is a suggested plan for making use of this idea.

Depending upon the grade level and the inclinations and interests of the children, activities from the following list may be selected: books, collections (butterflies, flowers, stones, pictures, etc.), group activities (Boy Scouts, Girl Scouts, Camp Fire Girls, Sunday-School groups, etc.), and arts and crafts (painting, modeling, block printing, weaving, etc.). In addition, the children may take trips and should be encouraged to do constructive work: helping mother in the home, weeding the garden, caring for younger children, doing errands, etc.

Now, recording these activities is a summer-long, rainy-day project. The record may take several forms. One is to make use of an old loose-leaf notebook. It is equipped with

the usual kind of paper but dividers for the activities are made of construction paper on which suitable illustrations have been drawn or pasted. The record of activities is made on the regular sheets. The notations may be as short or as long as the individual wishes. Some may be short: notations about arts and crafts, a mere reference to them will serve since the pictures or craft items will also be preserved. Others may be long: description of trips, work, activities.

Of course, an abbreviated record may be kept on a chart similar to that shown above.

As for the use of the activity record, it may serve as a diary of summertime events to aid the memory when, in the fall, the child may be asked to relate some of the happenings of the vacation. Also, it may well serve to stimulate the individual to continue a certain type of activity during the entire year.

GRUMPY ALLIGATOR

FOR THE STORYTELLING HOUR

By FREDRIKA SHUMWAY SMITH

Grumpy Alligator lay on the muddy bank of the river and felt very sorry for himself.

The trees arched thickly overhead, and long strands of grey moss hung down from the tree branches. Once he had seen a tiny ray of sun shining far above him through the foliage. He knew it was shining way up above the thick trees, and he blinked his little eyes and tried to see the blue sky. But he saw only dark green branches.

"Not a very cheerful place," sighed Grumpy Alligator. No one answered him.

Most of the time he lay in the water. His long head stuck out on the wet bank and he was too sleepy to move. Sometimes he dragged himself slowly out of the water and crawled up on the slippery grass. He caught toads, frogs, and lizards, ate them, and then slid back into the water again.

"I wish I could go where the sun shines," Grumpy said sadly.

He knew that the river must go somewhere, and he wished that he could follow it and get out of the dark.

One day he felt so sorry for himself that three big tears rolled from his eyes and splashed on the river bank, but nobody saw them; and one big sob shook him, but nobody heard it.

Suddenly he heard a little chirp. There on a branch sat a tiny red bird. "Why are you crying?" chirped the tiny red bird.

"I'm lonesome. I want to see the sun," said Grumpy Alligator.

"Crying doesn't do any good," chirped Tiny Red Bird. "Why don't you crawl along, and by and by you'll come to the end of the forest? It isn't far. I know, because I just flew in."

Grumpy Alligator dried his eyes and almost smiled. "Oh, thank you. Will you show me the way?"

"Certainly," said Tiny Red Bird, "follow me."

Very slowly Grumpy Alligator started to swim down the river and he cocked his small black eyes at the tiny red bird flying along ahead.

"Can't you swim faster?" chirped Tiny Red Bird.

"No," said Grumpy Alligator. "My legs are stiff and my body feels heavy,

but I'll do the best I can."

Suddenly they heard bumpy sounds. They stopped to listen. Down the river, under the overhanging branches, a white rowboat was coming.

"Hide quickly," said Tiny Red Bird. "I see two men with guns across their knees. I'm sure they are hunting for alligators. And your skin is just what they want for pocketbooks and belts!"

"Oh, oh, dear!" cried Grumpy Alligator. "I don't want to lose my skin because I can't ever get another."

Then he slid into the river and disappeared. Tiny Red Bird perched high in the tree above and watched the white rowboat as it came nearer and nearer and finally stopped. The two men rested their oars and looked all around. The little alligator was hidden in the muddy river and the bird was hidden by the green trees and grey moss.

One of the men said, "The bank looks as if an alligator had been lying here. The water is disturbed as if he had just gone in."

Grumpy kept very still. Tiny Red Bird didn't need to keep still because birds can fly everywhere and make as much noise as they please. So, he twittered and chirped to tell the little alligator that he was still there watching.

Finally the boat moved on. The oars dipped deeply into the water and almost touched Grumpy's head. He held his breath. Finally all was quiet again and he raised his head from the water and peeked around. He saw Tiny Red Bird in the tree waiting. He had been there all the time.

"Hello," Tiny Red Bird said. "You were lucky."

"Yes," said Grumpy, "and I could feel the bottom of the boat touch me."

"Could you really?" chirped Tiny Red Bird. "Well now, we must hurry and get out because they might come back."

Grumpy Alligator pulled himself up onto the river bank and slid along. Tiny Red Bird flew low under the trees and led the way. Just as Grumpy was feeling very tired he saw a dim light ahead and he heard Tiny Red Bird chirp, "We're nearly there. See that dim, green glow ahead? It's the light of the sun

coming in through the trees."

"Oh, yes, I see it," cried Grumpy, "and I hope it's bright and warm."

Suddenly they saw the golden rays of sun nearer and brighter.

Grumpy Alligator slid faster and suddenly he was out! He felt so happy that he flopped his long tail with joy. He looked up at Tiny Red Bird and really smiled!

"Oh, how beautiful you are! I couldn't see you clearly before."

"Thank you," chirped Tiny Red Bird pruning his feathers. "Now I must leave you as my family will be looking for me."

"What is your name?" asked Grumpy.

"My real name is Scarlet Tanager," answered Tiny Red Bird.

"You're lovely," said Grumpy Alligator, "and you've been very kind to me. I expect to stay here in this fine sunny place for a very long time."

"I'm glad I could help you," chirped Scarlet Tanager. "I live in a tree in a pretty garden not far away. I'll see you soon."

"Oh, I hope so!" answered Grumpy Alligator.

"Good-by!" chirped Scarlet Tanager. He spread his red wings and flew off along the bright river bank.

Grumpy Alligator watched him until he was only a flash of red. Then he looked around at the pretty fields covered with daisies, and up at the deep blue sky full of tiny white clouds. The warm, golden sun made the river look like a dancing mirror, and Grumpy's heart was filled with joy. He listened and heard the faint tinkle of cowbells and the baa-baa of sheep and then he went to sleep.

When he awoke the sun seemed almost too bright. He blinked his eyes. He was proud and pleased that Tiny Red Bird had shown him how to go in the sunlight where he could see the bright flowers and the blue sky. But he missed the leafy trees arching overhead and the nice, cozy river mud. Men in boats hunting for alligator could not find him in the dim swampland. It was his home.

He turned slowly and started back. He could always come out again whenever he wanted for Tiny Red Bird had shown him the way.

POEMS FOR JUNE

SUGGESTIONS FOR RECITATIONS

IT'S JUNE!

It's June! and the sky
Is blue as a jewel.
Up, Sleepy-head!
Come out, and you will
See the first roses,
Cream-white and red,
Each with a diamond
Crown on her head;
See a fat robin,
Bright-eyed and saucy,
Strutting the lawn,
Merrily bossy;
Telling his children
How they must listen
With heads turned aside;
How all things that glisten
Are not good to eat!
To hop without looking
Down at their feet.

It's June! It's June!
Oh, don't miss a minute.
Get up and come out
And plunge right in it!
—Marion Doyle

I DREAMED I WAS A CLOWN

Last night I had the funniest dream.
I dreamed I was a clown
And rode a great big elephant
A-lumbering through the town.
And all the little girls and boys
Came running out to see
What all the racket was about,
And laughed and laughed at me.
I turned some somersaults for them,
Frontwards and backwards, too,
And lots of things I didn't know
Before that I could do.
My! How those girls and boys would
laugh
When I would dance and sing.
I think I'd rather be a clown
Than almost anything.

—Nora Lee

WAVE DRAGONS

Each wave is a jolly dragon,
With a curling, frothy mane.
When he roars up the beach
I run out of his reach,
But before he goes back again
He gobbles up all the footprints
I leave as I run away;

Then I quickly make more,
And soon, with a roar,
Comes another wave dragon to play,
And to rumble, and stumble, and
tumble,
Till I stop, and I turn, and I say:
"Go back, there, Wave Dragon!"

It's fun to play tag on
A beach where the wave dragons play.
—Alfred I. Tooke



THE TRAVELERS

The rabbit leaps,
the mouse creeps,
the dog lopes,
the turtle gropes,
the robin flies,
the chicken tries—
the sleepy monkey
rides the donkey.

—James Steel Smith

THE FLAG WE LOVE

Our banner is a lovely thing
Of red and blue and white;
When to the breeze its folds we fling,
It is a thrilling sight.

It isn't just a perfect square
Of star-embroidered blue,
Combined with other colors fair
To blend in triple hue.

It is the emblem we revere,
And as we watch it fly,
We know it stands for safety here
Or 'neath a foreign sky.

We're proud to pledge our hearts and
hands
To serve it, if need be;
For truth and right it ever stands,
Loved banner of the free.

Old Glory it is rightly named,
To it our heads we bare,
For liberty it is far famed;
We rest within its care.

—Virginia R. Grundy

CIRCUS

Let's put the tent
Under the apple tree,
Let's play circus,
You and me.
You bring your dog,
I'll bring my cat;
You be a camel
And this and that.
I'll be a lion with a tasseled tail,
And in between times a spouting whale.
I'll be a clown,
You be a wire-walker,
I'll take the tickets
I'm the best talker.
You can sell peanuts and pink lemonade,
I'll be a glass-blower and show how it's
made.
I'll be a tiger tamer like the man who
came last spring.
While I'm doing that, you be anything.

You make a noise like a monkey in a
cage,
I'll be an elephant and roar with rage.
I'll be a calliope
With paper on a comb.
Oh, it's getting late,
I'd better go home!

Peanuts, peanuts—five cents a bag!
Lemonade, lemonade,
Just been made,
Lemonade, lemonade,
Made in the shade!

See the side-shows,
Better go in!
Admission, admission,
Only a pin.

Calliope, calliope,
Paper on a comb,
See you in the morning,
I'd better go home!

Calliope, calliope, paper on a comb!
Calliope, calliope,
Home, home, home.

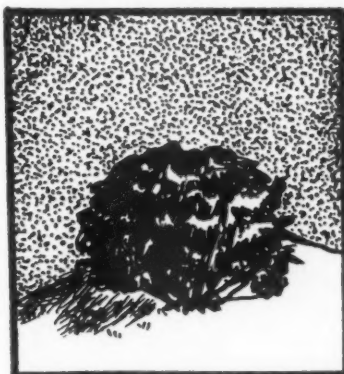
—Eleanor H. Guthrie

NATURE STUDY SEATWORK

WHAT WORD OR WORDS IN EACH SENTENCE MAKES IT RIGHT? DRAW A LINE UNDER THE WORD OR WORDS.



This is a flower,
shrub, tree.



This is a flower,
shrub, tree.



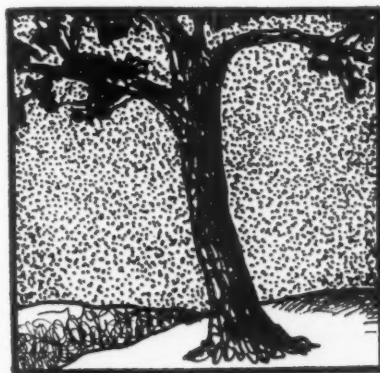
This is a flower,
shrub, tree.



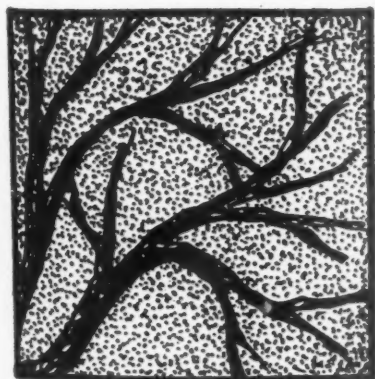
This flower
has two, four,
five petals.



This flower
has two, four,
five leaves.



This tree has
a long trunk,
leaf, stem.



There are many
trunks, petals,
branches, on a
tree.



All plants
have nuts,
thorns, roots.



Most shrubs are
taller, shorter,
the same size
as most trees.

ACTIVITIES IN THE KINDERGARTEN

PICNIC

By YVONNE ALTMANN
KINDERGARTEN DIRECTOR
OSHKOSH, WISCONSIN

I. Introduction and motivation

Picnics are fun if you choose a safe place. At the end of the school year it is almost a tradition with lower grades, especially in the kindergarten, to have a picnic. Because of all the other excursions the children have gone on throughout the school year, which resulted in their playing, planning, observing, exploring, and learning, they should now realize many of their ever-increasing motor and intellectual potentialities which will result in an emotional control so that their conduct will be socially desirable.

II. Objectives

A. General (See master outline in September, 1946 issue of *Junior Arts and Activities*.)

B. Specific—To help each child

1. To want to have a picnic
2. To remember to bring his lunch
3. To understand the right kinds of food to pack in his lunch basket
4. To understand the need of cleaning up the grounds after the picnic is over
5. To understand the need of wearing old clothes on the picnic
6. To choose the right types of games to play on a picnic
7. To share his lunch
8. To eat correctly and use good manners

9. To find out any information he wants to know about the unit

10. To understand the things he can do to make the picnic a success

11. To make a book on the unit or contribute to the class book

III. Development of the unit

If possible, choose a place that will be a surprise for the children. Every day they will want to know where they are going, but they would really rather be surprised as to the destination. Our surprise was the athletic field just a few blocks from the school. We could play under the shady oak trees and later eat under their branches. If you choose a place with a lake or river be sure that you have close supervision of the children.

Two weeks before school closed, we told the class that Monday, if it did not rain, we would have a picnic. If it rained, we would go the first day the ground was dry.

The day after the picnic the children were all ready to make a book on that activity. The medium we used this time was a combination of crayon and alabastine paint. First, crayon was used on the 9" x 12" manila paper. If the crayon is marked thickly on the paper the alabastine, which is mixed with almost all water and just a little powder until it is the consistency of water color, will not cover up the crayon and it gives a lacy effect as it spreads over the crayon. It is not necessary to paint over the crayon and it is best to let the children combine the crayon and alabastine in any way they wish. The pictures were mounted on 9" x 12" chocolate brown construction paper. We used manuscript to write the subject matter. (The sentences should be very simple and to the point so that almost any child can read it, and a kindergarten child can remember what is on each page.)

We made the cover from tan construction paper 10 $\frac{1}{8}$ " x 12". Oaktag, the same size, was put between two sheets of this colored paper. A 9" x 12" sheet of chocolate brown construction paper was placed on one side. We stapled the paper together. Then we made another cover. The word "Picnic" was cut freehand out of tan construction paper. The letters were all capitals 5" high and about 2" wide. The letters were pasted onto one of the covers and reinforced with staples. The pages are put between the covers and tied together with a shoelace.

IV. Outcomes

A. Skills in which children became more adept

1. Thinking about and discussing the unit
2. Speaking before the group
3. The handling of crayon and alabastine paint as an art medium
4. Music and stories on the unit
5. Organizing material and making a book about the unit

6. Solving arithmetic problems and counting in activities connected with the unit

B. Knowledge — Children added to their fund of information about

1. Picnics
2. The unit
3. The picnic grounds

C. Attitudes (See master outline in September, 1946 issue of *Junior Arts and Activities*.)

D. Appreciations — Children were more keenly aware of the just valuation of

1. An orderly and logical development of the unit

2. The community and the community helpers (the man who took care of the field)

3. Their abilities and those of other children

4. The book they made on the unit

V. Integrations

A. School subjects (See master outline in September, 1946 issue of *Junior Arts and Activities*.)

B. Greater application was given to listening to discussions and stories and learning a song about the unit.

C. Conversational ability improved as the child discussed the unit.

D. Manuscript writing seemed very essential to them in order to make the book on the unit.

VI. Bibliography

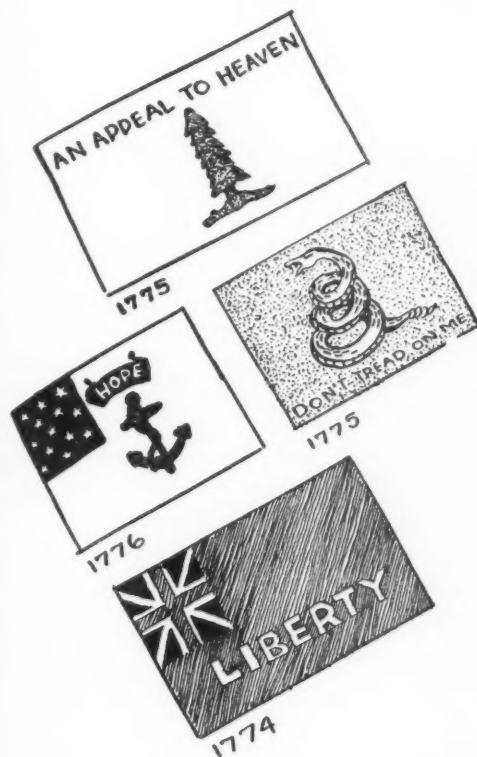
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C. Games
Foster and Headley, "Mother Kitty and Baby Kitty," "Did you Ever See a Lassie?" *Education in the Kindergarten* (Chicago: American Book Co., 1936)

THE STORY OF OUR FLAG



We observe June 14 as Flag Day each year. Why? The answer is to be found in a resolution passed by the Continental Congress June 14, 1777: "The flag of the United States shall be thirteen stripes, alternate red and white, with a union of thirteen stars of white on a blue field, representing a new constellation." From that day forward, the new nation was to have a flag!

On this page we have tried to show something of the origin and meaning of our flag.



Before the thirteen colonies declared their independence from the mother country, several of them adopted flags of protest. Some became very widely used.

Notice that the "Liberty" flag has the Union Jack of the mother country. The pine tree seemed to symbolize prayer and was used to indicate that the colonists prayed for relief from their troubles. The same idea is embodied in the "hope" flag. The snake flag bore the legend, "Don't tread on me."

The history of the United States contains many legends dear to all of us. One of the most popular tells how the first flag was made by Betsy Ross. Many scholars have concluded that it probably is not true.

It is said that General Washington and two other gentlemen visited Betsy Ross at her upholstery shop in Philadelphia. They told her that the Congress had decided upon a flag, showed her some sketches, and asked her to make one for them. It was she, according to the story, who suggested that the stars have five points instead of six. Then she made the flag which was presented to Congress.

The picture shows the Betsy Ross house.



It took almost a year after the Declaration of Independence for the Congress to decide that the United States should have a flag of its own and what that flag should be. Remembering that the colonies had formerly been a part of England's possessions, we recognize that theirs was the first flag used in the United States. Gradually, the "Grand Union" or "Cambridge" flag evolved. It was the flag flown when Washington took command of the Continental forces. It has a small Union Jack in the corner and the thirteen red and white stripes.

The final step was to change the Union Jack to a union of thirteen stars.

The resolution of June 14, 1777 said nothing about the position of the stars in the new flag. Some flags were made with the stars in a circle. Some had a single star in the center of a circle of stars; some, crisscrossed lines of stars.

When new states were added to the Union, the problem of adding stars and stripes arose. In 1798 Vermont and Kentucky became states and the number of stars and stripes was raised to fifteen each. After the acquisition of the Louisiana Territory it became apparent that many states would probably be added to the young Republic. It was suggested that the number of stripes be diminished to thirteen (as originally planned) and that a new star be added for each new state. This was done in 1818 when the design of the flag was fixed by law.

THE EARTH AS ONCE IT WAS

AN EXPLORATORY UNIT FOR UPPER GRADES

By ANN OBERHAUSER

MOTIVATION

This is the sort of unit in which the children's enthusiasm should be definitely aroused and in which their spontaneous interest is high. Unless the course of study is being rigidly followed and it demands that the subject be treated, we do *not* advise undertaking this classroom project without the wholehearted interest and enthusiasm of the individuals. Of course, there are several valid motivations for the study and one or another of them should be used in all cases. Among the best are (a) a trip to a museum in which specimens of fossils, representations of prehistoric animals, and the like are displayed; (b) books of dramatic interest telling about the search for evidences of life long ago on the earth; (c) the discovery of some bit of such evidence by the children in their neighborhood.

OBJECTIVES

1. To increase knowledge about the world in which we live.
2. To develop a desire to investigate and learn about the progress of this branch of science.
3. To develop an appreciation of the work that scientists do for us.
4. To observe how different branches of science contribute to our welfare.
5. To work together to solve a difficult problem.
6. To enlarge horizons and to provide larger areas for appreciation and enjoyment.
7. To stimulate independent thinking.

APPROACH

When the interest and enthusiasm of the class have been aroused, the teacher should direct the discussion so that the purposes of the unit will be apparent to the pupils. Also, the orderly development of the subject matter should be charted at this point. This will necessitate discussing the things to be learned, how to go about learning them, and what to do to make the study interesting.

Under the first heading, the ideas to be developed should include: (a) how we know about the earth in prehistoric times; (b) what the earth looked like in

those times; (c) what types of plants there were; (d) what animals. While it is not a part of this present unit, if the class wishes to augment it, a short study of early man might be inserted as a fifth point.

How to go about learning these things will entail (a) research, (b) visits to museums during the course of the study, (c) writing letters to authorities to get additional information, (d) perhaps talks by or interviews with persons acquainted with the subject.

What to do during the unit should require collective planning and purposeful organizing. Perhaps the children will want to make a giant notebook, collect material for an exhibit, plan a program, or write an original book illustrated by themselves to make the study more interesting to other children. This latter project can be made most exciting because the children may find that some books on the subject do not meet their requirements. By solving the problem of what kind of book *they* would like and how to prepare such a book, the children can integrate all phases of the study and all talents they possess.

DEVELOPMENT

I. What are we going to study?

A. To find out the area of the subject matter is the first step. We suggest that the children learn something about what science believes is the way the earth developed and with it the plant and animal life on the earth.

B. To learn meaning of scientific terms used in this branch of knowledge

1. Paleontology
2. Fossils
3. Petrified bones
4. Eruptions
5. Geological areas

C. The limits of this branch of science should also be impressed upon the children.

1. Theory or hypothesis — what supporting evidence is there
2. Fact — how proved

II. How do we know what happened when the world was young?

Here the boys and girls should be in-

troduced to the twin subjects of geology and paleontology (although these names need not be used with younger children). Geology tells about the history about the earth in past ages especially from a study of rocks and rock formations. By studying these things and by using other sciences in conjunction with geology, the scientist can tell what was going on on the earth at given periods of early time. It is from this science that we learn the various periods through which the earth has passed.

Closely associated with geology is the science of paleontology. This study tells us about life on the earth in past ages — plant life, animal life. From the rock formations which the geologists find, the paleontologist may discover impressions left there when mud and sand containing different plants and animals were compressed by changes in the temperature of the earth and by other changes. Sometimes pieces of bone and other material are found. These are called fossils. From them scientists are able to reconstruct the shapes of plants and animals.

Children should learn that, while reconstructed prehistoric animals show these creatures with flesh, fur, and skin, scientists must depend for these outer coverings upon their knowledge of other branches of science than paleontology. Also, while these reconstructions are as accurate as possible with the data at hand and with logical inferences from skeletal remains, no one claims that the reconstructed animals looked *exactly* like that. Basically the prehistoric animals resembled their modern models.

The same may be said about plant life. Often scientists discover impressions of leaves and other forms of plants and from these, with a knowledge of botany, they can describe for us the appearance of prehistoric plants.

III. What kind of plants were there on the earth in prehistoric times?

(Note: the following appears as a continuity instead of as a topical outline. However, many points should be elaborated upon in the course of the study.)

When the world was very young, it

was very, very hot. Gradually the earth cooled and as it did so great seas appeared. As a matter of fact there was no dry land at all. So, it is not strange that the first plants lived in the water. They were very tiny plants well suited to the place in which they lived. As more changes came to the earth, the plants became bigger. There were muddy places, and then damp places, and finally good, dry land on which plants could grow.

At one time in the history of the earth there were forests of giant ferns. These ferns were as big as trees. Gradually they died and sank into the mud and muck. Other layers of earth and stone covered them and pressed them down very hard. After millions of years the pressure on these dead fern forests was so great that they now are useful to modern man as coal.

IV. What kinds of animals were there?

The first animals were also tiny creatures who lived in the water. Gradually they became bigger. Fishes peopled the seas and then reptiles and amphibian creatures which needed much water but could also breathe the air. These were the dinosaurs. We must not think of all dinosaurs as being very large. Some were small. Some flew through the air. Some lived mostly on the land and walked on their back feet. Some, because of their tremendous size lived in the water because the water helped to support their weight. Some were harmless creatures who munched on the leaves and grasses about them. Some were very dangerous and attacked other creatures whenever they wanted a good meal.

But the earth changed and there was less and less water and muddy land. The reptiles were not suited to a life completely away from water. Besides that, it became very hot on the earth. Gradually, most of these animals disappeared from the earth. In their place different types of animals were developing, birds and animals which looked something like those we now know—but not quite. There were many types of animals which have long since disappeared or, as the scientists say, become extinct. Strangely they lived where one would least expect them to. Elephants and tigers in Europe!

More and more centuries passed. Some animals died out completely. Some moved to new places. Some stayed on. It is interesting to think that scientists now say that the very first horses in the world lived in what is now the state of Wyoming and the surrounding country. Yet, when the Spaniards first came to North America there was not a single

horse to be found! All our horses are descendants from those brought to America by the Spaniards and other settlers.

V. How the earth looked

We have told something about the plants and animals on the earth and have indicated just a bit that the types of plants and animals depend upon the kind of land and water and even temperature. Now let's look at the earth.

As we said, the earth at first was very hot. Some scientists say that it was nothing more than a flaming ball of gas. But as the vapors rose they cooled and condensed and fell as rain. This cooled the earth and made great seas and muddy places. (This is what the best evidence of science can provide.) Then the earth continued to cool on the outside but there was still much fire and heat at the center of the earth. (Remember, we still have our volcanoes.) This expanded the cooling portions and tossed up great flaming gusts of material. This made land areas, so the scientists tell us.

It was still rather hot on the earth but it was damp and everything grew and grew. Later, for some reason, it became much hotter. The seas dried up and so did the rivers. What were formerly swamps became deserts and more flaming material was thrown out by the volcanoes.

After this period (which lasted millions of years), there came another period of warm temperatures. That is why the scientists have found evidences of animal life in the far north of Europe; it was much warmer there then than now. But this didn't last. Cold winds blew; snow and ice came. It covered a great portion of the northern hemisphere. This was the ice age. By examining the rocks scientists can tell just which parts of the world were covered by the ice caps and how many times the ice developed and melted then came again.

The last part of the ice age made way for a new period of history. It was at this point that we begin to have evidences of man on the earth. But to study about ancient man is to undertake a large project and space does not permit us to go into that subject here.

CORRELATIONS

This unit has possibilities for correlating every subject of the curriculum. By consulting a table of geologic areas, the class can familiarize themselves with large figures as given in the millions of years which each period covered. Addition and subtraction problems can be solved in this field; but the most im-

portant activity is to learn to manipulate the figures properly and easily.

Vocabulary and language development will come as a necessary part of the unit. Dictionary and encyclopedia work is important and proper use of these tools can be taught naturally and effectively as the occasion arises. Of course, the children will write stories and poems and perhaps even write the words to a large cantata to be sung as a closing activity.

In geography, children might point out where significant excavations have taken place, where the land was covered by glaciers, what the effect of these glaciers has been upon various regions, and so on.

The most significant advance in the children's knowledge of science can be made in distinguishing fact from theory. The scientific method (see "Fighting Disease," March 1947, *Junior Arts and Activities*) might be introduced or reviewed. Inasmuch as so much is written on a popular level about the findings of scientists working in this field, it is most desirable that children (and adults, too) have some basis for judging scientific fact as opposed to conjecture and hypothesis, even if the latter are based on the opinions of reputable authorities.

CULMINATING ACTIVITIES

Perhaps the class might choose some stirring musical composition of moderately long duration and write the words to a cantata which describes the facts learned during the unit in a dramatic way. Music might also be used as a background for a choral speaking program worked out along the same lines.

The class notebook might be made large enough so that the individual pages may first be used as an exhibit.

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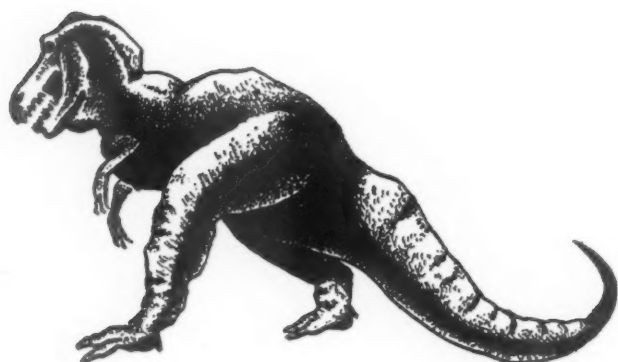
**PREHISTORIC
TIMES**

ILLUSTRATIONS

These illustrations of prehistoric animals are to be used primarily in connection with the unit on "The Earth As Once It Was" on pages 34 and 35. In the study the children may refer to these illustrations as they come across information about the animals.

Also, the clay modeling project—page 39—makes use of these figures. The children cannot, of course, make very exact replicas of the animals we have pictured; however, they should be able to make recognizable forms. The children should be encouraged to make large figures for these are easier to work with.

In addition, older children will not want to overlook the design possibilities of the illustrations. Some of the figures are very good for notebook covers on notebooks of the unit or allied studies. Murals, borders, and so on can also be based on the illustrations given here.



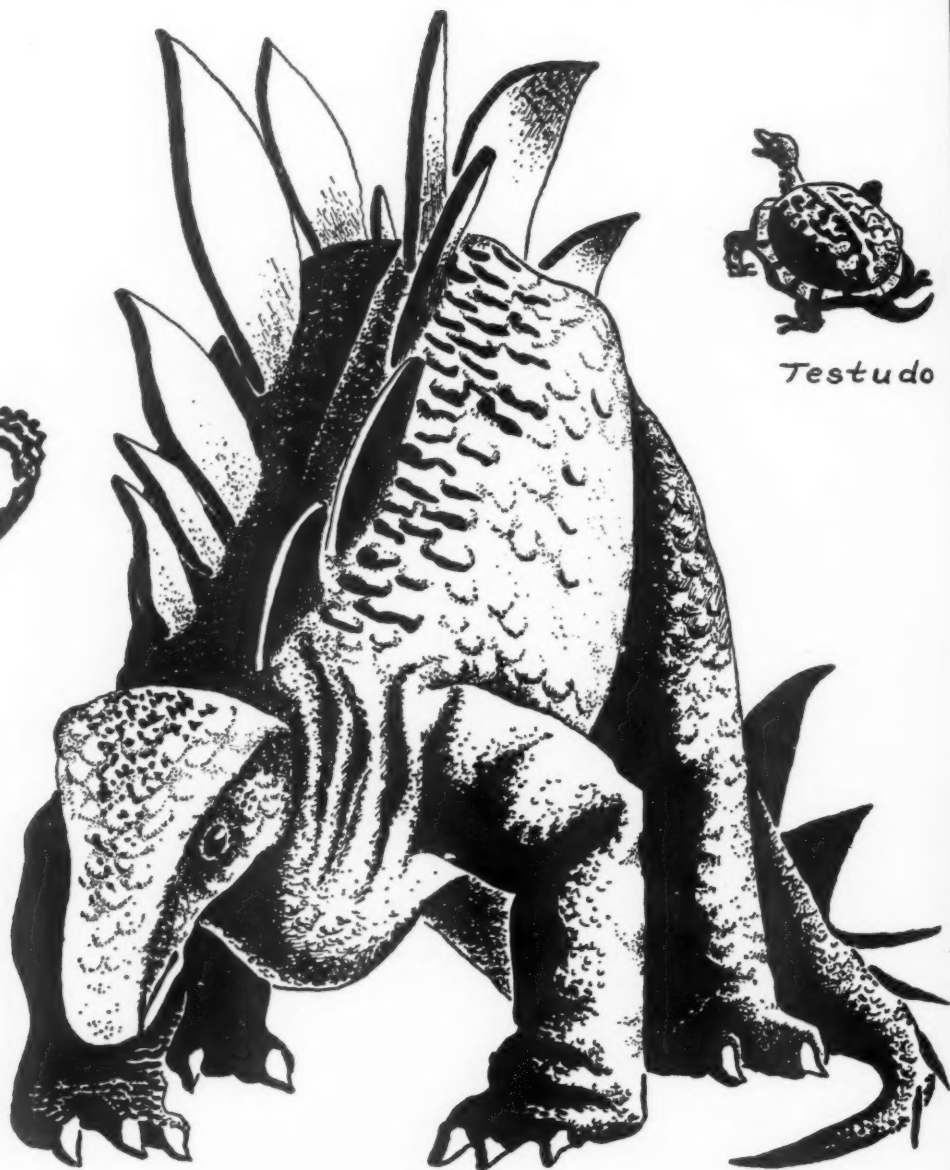
Tyrannosaurus



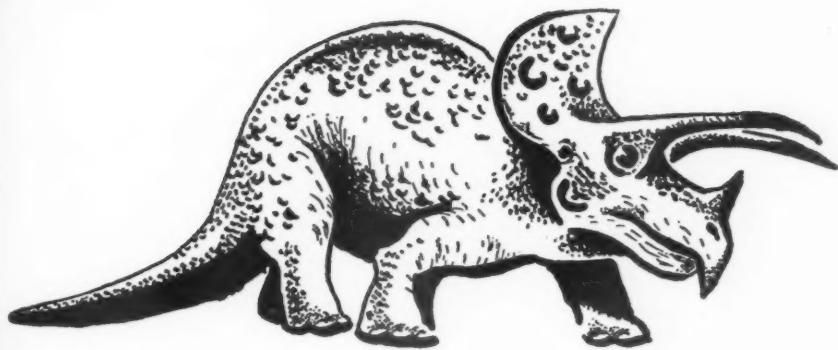
Champsosaurus



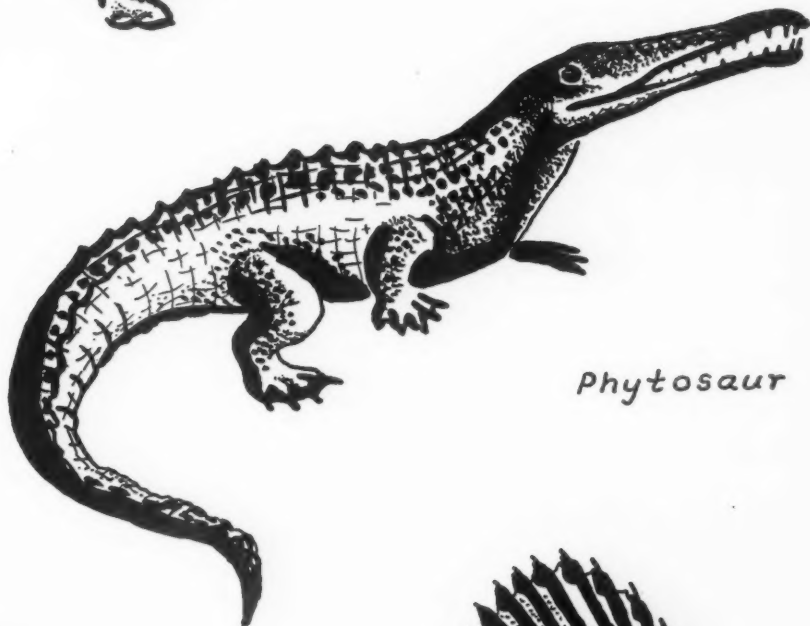
Testudo



Stegosaurus



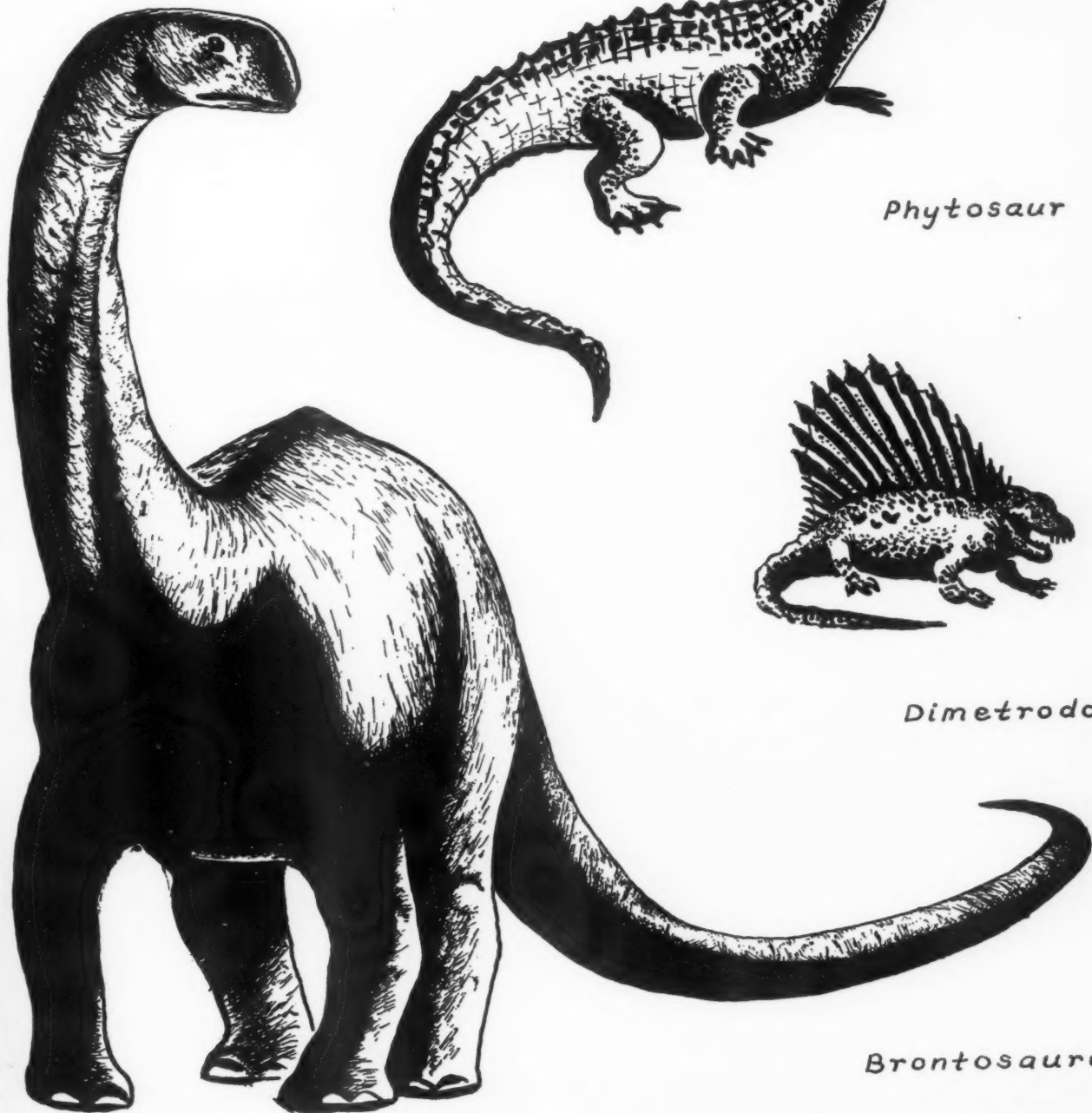
Triceratops



Phytosaur



Dimetrodon



Brontosaurus

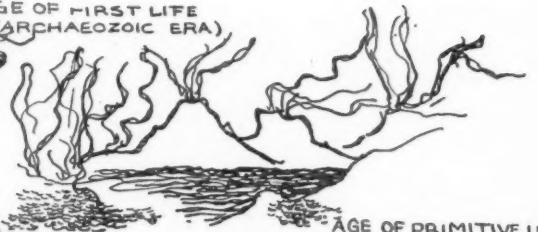
ILLUSTRATED CHART



THE EARTH

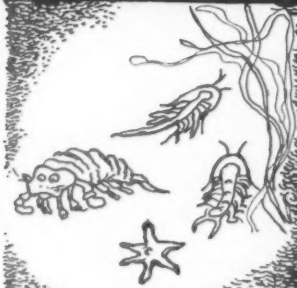


AGE OF FIRST LIFE
(ARCHAEOZOIC ERA)

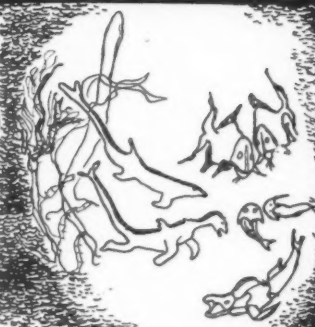


AGE OF PRIMITIVE LIFE
AGE OF IRON
(PROTEROZOIC ERA)

AGE OF ANCIENT LIFE PALEOZOIC ERA



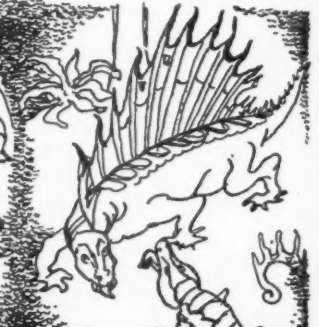
CRUSTACEANS IN SEA



FISHES



AMPHIBIANS



REPTILES

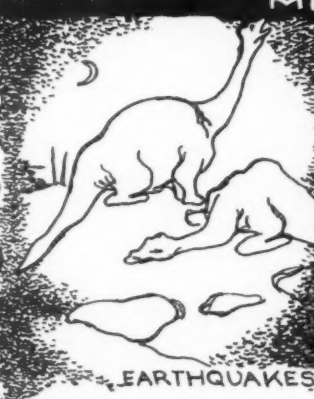
AGE OF REPTILES MESOZOIC ERA



FLYING REPTILES



DINOSAURS

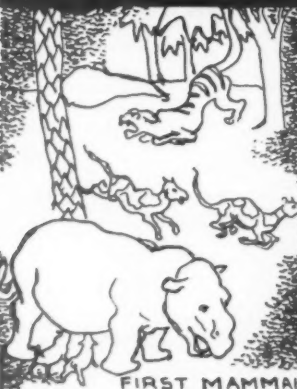


EARTHQUAKES



VOLCANOES

PRESENT AGE CENOZOIC ERA



FIRST MAMMALS



MORE MAMMALS



ICE AGE



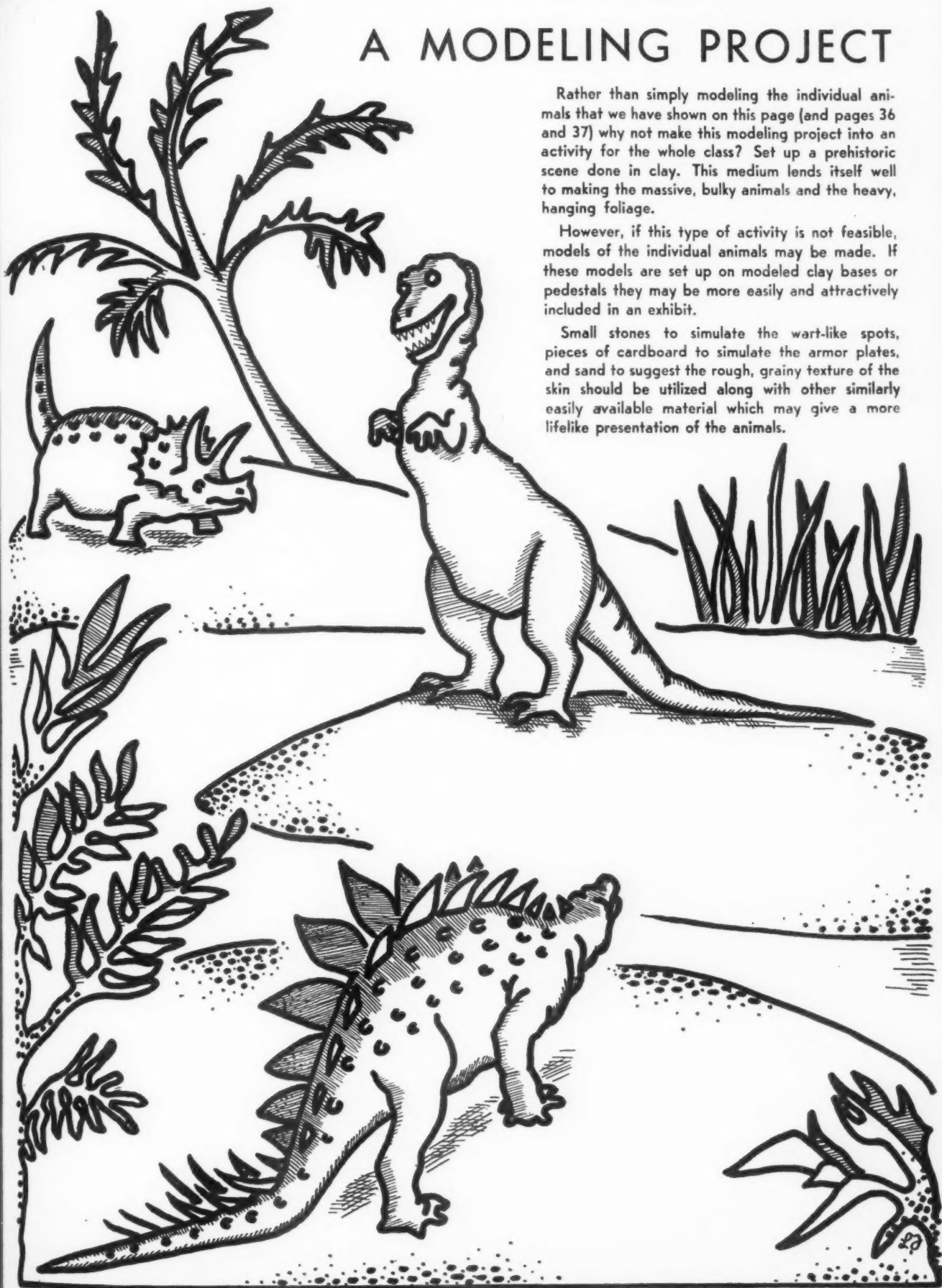
PRESENT-DAY ANIMALS

A MODELING PROJECT

Rather than simply modeling the individual animals that we have shown on this page (and pages 36 and 37) why not make this modeling project into an activity for the whole class? Set up a prehistoric scene done in clay. This medium lends itself well to making the massive, bulky animals and the heavy, hanging foliage.

However, if this type of activity is not feasible, models of the individual animals may be made. If these models are set up on modeled clay bases or pedestals they may be more easily and attractively included in an exhibit.

Small stones to simulate the wart-like spots, pieces of cardboard to simulate the armor plates, and sand to suggest the rough, grainy texture of the skin should be utilized along with other similarly easily available material which may give a more lifelike presentation of the animals.



MARCH BEHIND THE FLAG

In march time

Words and Music by
Z. Hartman



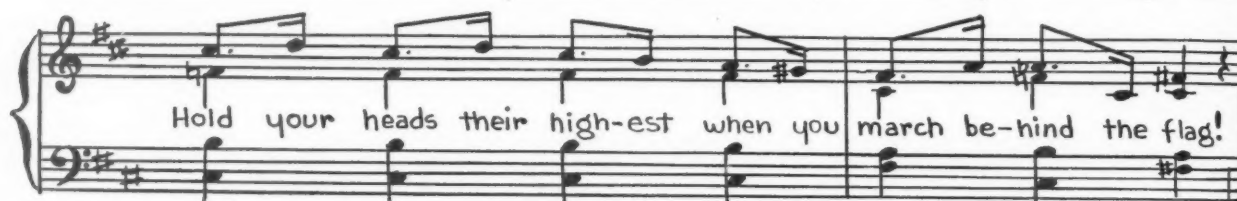
stand a lit-tle straight-er than you've ev-er ^{tried to} stand;



Move a lit-tle fast-er; not a sin-gle step should lag;



Step in per-fect meas-ure to the mu-sic of the band.



Hold your heads their high-est when you march be-hind the flag!



See the folks sa-lute the flag all up and down the street.



How its stars and stripes un-furl and up-ward brave-ly soar!



*Rat - a - rat! The drum keeps time for all the tramp-ing feet;



f Chil-dren should march *rit.* proud-ly when Old Glo-ry goes be-fore.

*Tenor drum beats

Repeat for march



AUDIO-VISUAL AIDS

YOUR VACATION TRIP

When one goes on a vacation trip, workaday problems should be left behind. We doubt, however, that teachers can really do this even though it is most desirable. So, if you are going to think about classroom problems during the summer, you might as well do it as painlessly as possible. On your summer vacation trip be a collector!

This is what we mean. Since the personal, "I-was-there" approach is so effective in presenting material to children, any material you gather during your trip will have additional meaning for the children. If, for example, you go to Yellowstone National Park, you will undoubtedly get several printed folders from railroad or bus companies, the National Park Service, touring services, and the like. Instead of putting them away among your souvenirs, remember to keep them for handy reference when the occasion arises in your classroom in the fall.

The same thing may be said of the photographs you take while on your trip. Some will be of a personal nature but many will have value in geography, science, and other classes. If you believe that some of the pictures have particularly good possibilities for classroom use, you might persuade the school to have another set of prints made from your negatives for inclusion in the permanent visual-aids collection.

There are several types of opaque projectors which can accommodate such things as picture postcards, snapshots, and the like. These are particularly useful in the small school or classroom where regular movie or stripfilm equipment may be considered too expensive. In addition, almost any kind of material can be used in the projectors so that the scope of their usefulness is much larger than might at first be supposed.

In the past ten issues of *Junior Arts and Activities* we have experimented with this audio-visual-aids feature. We have used our own judgment regarding the types of information most de-

sired by classroom teachers. We have tried to cover as wide a variety of subjects as possible so that, if one month's column did not provide helpful suggestions to meet a particular need, the material in subsequent months might do so.

We are very grateful to all the teachers who have expressed their opinions about this feature. Those who have written us have been almost unanimous in their praise. Now, we should like suggestions about the type of thing we should include on this page beginning next fall. Shall we emphasize sources of supply for audio-visual material? Shall we continue to give hints about the use of this material in the classroom? Shall we point our articles toward a particular grade or type of school? In what subject-matter areas shall we present audio-visual materials?

These are just a few of the questions we should like to present to you. We hope that some of you will take a few minutes before you close your desks for the summer to give some thought (and then write to us) to what you want this column to be next year. We sincerely want to serve you better.

A final word: during the past year many teachers have written us requesting additional information and material about audio-visual aids. We appreciate all of these letters because they indicate interest in this department. For the most part we have tried to answer requests for information promptly and as completely as possible. We must confess, however, that recently we have not been able to take care of letters as soon as we should like. We are devising a better system of handling correspondence so that when school reopens in the fall we shall not ever fail to give immediate attention to all your letters—and we hope to receive many of them.

Thank you very much for your encouragement and support of this feature. We shall try to do an even better job during the coming year.

CAPTURE THEIR INTEREST

That is the principle of effective teaching. And that, too, is the reason why stamp collecting has so many advantages as a teaching device.

By incorporating into your classroom the idea of "seeing" stamps from a new point of view you will be helping yourself. Stamp collecting stimulates interest in geography, it automatically classifies the different eras of our history for the children, and it fixes important dates in their minds. More than that, it further acquaints children with the great men of this country.

Inexpensive — one does not need elaborate equipment or go to great expense to have an interesting collection — it has an additional economic value since every stamp's value automatically increases with age, whether mint or cancelled. Some very small values become worth many times their original cost. There are literally hundreds of stamps which may be obtained for less than a nickel.

The most popular and practical album for the young collector is *The Postage Stamps of the United States*. This extraordinarily attractive album contains spaces for every design and color of United States postage and air mails down to 1942. New pages for the album are issued at regular intervals. Particular attention is paid to artistic and attractive arrangement of the stamps. Beautifully bound in blue and gold, it lies flat when open; has designs on one side of the page only; has a little frame for each stamp; and is in every respect a decided advance and improvement over the old-style stamp albums.

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SIGURD

(Continued from page 22)

reasonable and so he dug many pits before he settled himself in the pit that lay in the middle of the road.

Just at dusk Fafnir crept down the road to the river. He breathed fire and venom but Sigurd was not afraid and waited quietly.

(Pause for sketch.)

Then, just as the monster was directly over him, Sigurd plunged his sword upward, up to the hilt it went into the body of the worm. Sigurd leaped to his feet and drew out his sword and fled to the farthest pit. And it was a good thing that he did because the monster clawed and lashed his tail and his blood destroyed everything about him.

When Fafnir was dead Regin came out of hiding. "Well done," he said, but he did not look entirely pleased to see Sigurd quite safe. "Now, as a special favor, take the heart of the worm and roast it and then give it to me."

Sigurd did as Regin asked but as he took the heart his hand touched it. He put his finger to his mouth and suddenly when the blood of the dragon's heart touched his tongue, he was able to understand the talk of the birds. Naturally, he was amazed and pleased and he stopped to listen to two woodpeckers in a tree close by.

The first bird was saying, "Sigurd roasts the heart of Fafnir for another; he doesn't know that if he would eat it himself he would become the wisest of all men."

"Yes," said the second, "and there is the evil Regin who was going to have Sigurd kill Fafnir and then be killed by the worm's blood so that he, Regin, could have all the wealth. But since Sigurd escaped, Regin is going to eat the worm's heart and become all-wise and then kill Sigurd."

The first bird sighed. "If Sigurd were wise, he'd kill Regin before he himself is killed."

Sigurd was shocked at what he heard. He looked over to where Regin lay. Regin didn't know that Sigurd was watching him and his face revealed his evil, hate-filled thoughts. Sigurd knew then that what the birds had said was true.

(Pause for sketch.)

"I would have been fair, but fair play and honor are unknown to Regin. He is greedy and lustful for gold and he hates me so much that I must kill him before he destroys me." And Sigurd drew his sword and slew Regin.

Then Sigurd heard the woodpeckers

AIRPORT

(Continued from page 7)

Schwieg (New York: Silver Burdett Co., 1938)

School and College Service of United Air Lines, Chicago, Illinois publishes several booklets, etc., which teachers might find useful. Write to them for further information.

Transcontinental & Western Air, Inc., Kansas City, Missouri—see above

Pan American World Airways, 135 East 42 Street, New York 17, New York—see above

Airplanes, Unit Study Book 113, Maria Ellen Johnson (Columbus, Ohio: American Education Press, Inc.)

The Story of Flying, Unit Study Book 302, Beatrice J. Hurley (Columbus, Ohio: American Education Press, Inc.)

PUPPET PLAY

(Continued from page 12)

I have my own smile now.

HOMER: Maybe I've got mine back then! Let's see. (puts hands before face and then nods head excitedly) I've got it, I've got it? (does jig as children jump up and down in excitement) My smile is back again and now I can be funny for the children! (dances around stage while children clap hands)

ROBERT and JANET: We're so glad, Homer!

HOMER: So am I! And I don't mind at all that you borrowed it, Robert. Not if it helped you find a smile of your own. Now (shakes finger at Robert) use it often so that it stays in good working condition!

ROBERT: I will, I will!

HOMER: Let's go, Janet and Robert. We'll be just in time for my performance today.

(All repeat Hilarious Homer's song and on the last line dance offstage right, Homer leading.)

CURTAIN

singing for joy to know that he was safe. He ate the heart that he might be wise and then went to find the treasure. The great riches he put into two huge chests and slung them over his horse and started home.

(Pause for sketch.)

But Sigurd had other adventures. Even as he rode homeward he heard the birds singing of a Hall of Flame in which slept a maiden whose name was Brynhild. This story, too, is recorded in the Volsunga Saga, a collection of legends you might like to read.

TEACHER'S CORNER

NEWS AND DISCUSSIONS OF INTEREST TO TEACHERS

We are here to serve the teachers. Help us to help you!

Teachers are invited to send to this department ideas and suggestions that will be helpful and interesting to teachers. One dollar will be paid for each contribution accepted. Send your ideas and suggestions for this page to Teacher's Corner, *Junior Arts and Activities*.

HANDICRAFT MATERIAL

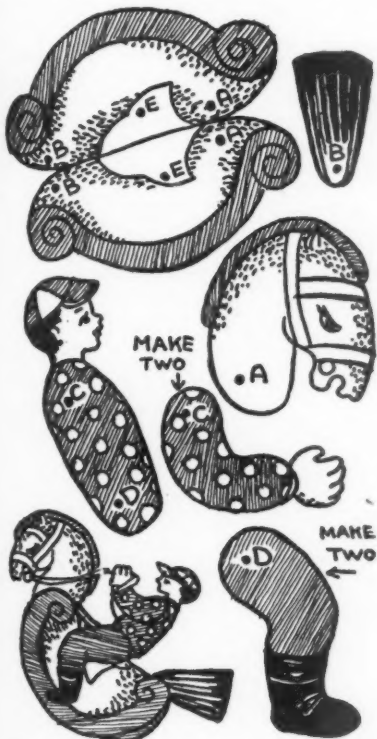
The following procedure ensures a generous stock of materials and ideas for handicraft periods, besides giving each child the feeling that his contribution is a valuable one. Have each child bring to school a good-sized box. In addition to the box, each child should make a substantial portfolio. Into their boxes the children should put from time to time such supplies as empty boxes, colored paper, bits of pliable wire, empty spools, pipe cleaners, etc. To fill their portfolios the children should collect sketches, diagrams, and printed directions for articles they might like to make. If the child has an original idea that pleases him, he should jot it down and include it in his portfolio material.

The humbler the materials, the better, since their use brings out the ingenuity of the children.

—Mabel C. Olson

JOCKEY AND HORSE

Make this jockey and horse from a semi-stiff paper such as oak tag. It must not be so stiff, however, that it breaks when bent.

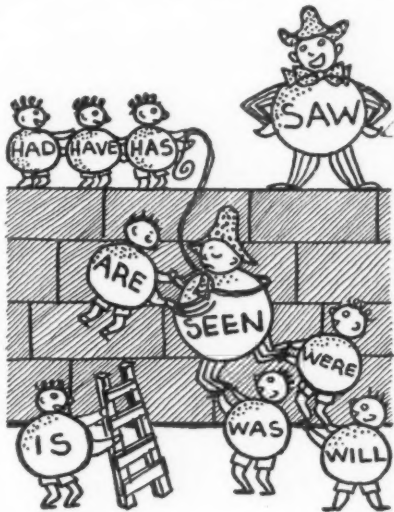


Match dots and put together with small fasteners. The oak tag color makes a good foundation for combinations of other colors.

—Doris H. Wurst

VERB FORM CHART

While looking through an outdated language book I ran across a very helpful chart for teaching the correct forms of verbs. It shows how some verbs can stand alone, while



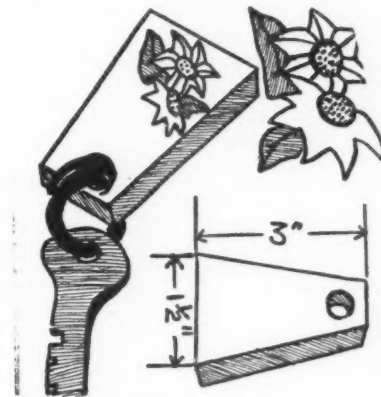
others cannot and need helpers—see illustration.

I make a large drawing on the blackboard where the children can refer to it from time to time. The use of colored chalk for the drawing makes it more interesting. I have found this chart to be a very successful teaching device.

—Barbara Allred

KEY RING

To make this key ring first cut an oblong $1\frac{1}{2} \times 3$ " from pressed wood. Sandpaper all sides of the wood until it is smooth. Bore a hole about $\frac{1}{8}$ " from the top. Run a piece of string about 8" long through the hole. Hold both ends of the string and dip the stick in white (or any other color preferred) paint. Hang the wood up to dry by the string.



When the paint is dry, glue a flower sticker on the front side. Shellac over the flower.

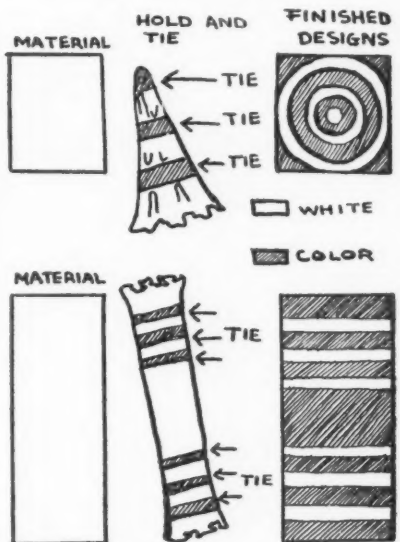
Then, run a green chicken leg band through the hole at the top. This makes an attractive and handy key holder.

—Edna C. Robinson

TIE-DYE WORK

All the material that is needed for this work is a package of dye (whatever color is desired), a ball of twine, and white cloth which you wish to decorate.

Take the cloth and hold as illustrated. Wrap the twine very tightly about portions of the cloth you want to remain white. Be sure to wrap tightly. When it is all tied, dip the cloth in boiling dye for about five minutes. Remove from the dye and let the ma-



terial partly dry. Then, unwrap the twine and dry completely. The tied parts will not be perfectly straight but this adds to the appearance of the finished scarf. If straight lines are desired, take needle and thread and baste along the lines desired and pull the thread tight. Wrap twine exactly to the edge of the basting.

—Eula B. Lewis

A FLAG DAY TEA

A Flag Day Tea, to which the mothers and friends of the children are invited, provides an excellent opportunity for a last get-together of the school year. Such a tea might also be given as a P.T.A. meeting.

Preceding the tea, have one of the children tell the story of the first flag. Or, if you prefer, a group might dramatize the story. Decorate the room with flags of the United Nations and before serving have the entire group join in the pledge of allegiance.

Refreshments may be simple—milk for the children, tea for the parents and cookies or sandwiches are adequate.

—Dorothy Overheul

WINDOW SHADE CHART

If you haven't sufficient room on the regular bulletin board for some of your notices, try this idea. Take a window shade and unroll the size you have need for. Fasten heavy string around the roller and hang. Pins hold the material on the shade. This sort of bulletin board has the added advantage that it need be rolled down only to the desired length and thus saves room.

—Valeria Wiegman

YOUR BOOKSHELF



The stories of Phyllis Whitney have been popular with adolescent readers and their teachers for some time. Now we have a new story by this outstanding author, *Willow Hill*. This book was awarded the Youth Today first prize.

Briefly, *Willow Hill* concerns the effects on the lives of the residents of Willow Hill of the arrival of a group of Negro workers and of the building of a group of homes for them. The principal characters are students in the local high school: Val, the daughter of the coach; Judy, her best friend; Steve, house guest of Val's family; Tony, popular athlete and son of one of the important men of the town; and Mary, a Negro girl who edits the school newspaper. Of course, the grownups play their parts, too. Val's father is at first neutral in the controversy over the housing project but when pressure is put to bear on him to exclude Negro players from his basketball team he comes out strongly on the side of right. Val's mother takes the opposite point of view until her family is attacked and then joins with her daughter and husband.

The whole question is one of resolving the problem of white people and Negroes getting along with each other—in school and in the community. Miss Whitney does not solve the problem. No one person can. But she does point out what can be done—especially by the young people with whom she is especially concerned—to make living with one another pleasant and mutually beneficial. Miss Whitney is to be commended for her efforts. She has given young people an exciting, dramatic story so well integrated with her "message" that one cannot be disassociated from the other.

(Reynal and Hitchcock, 386 Fourth Ave., New York—\$2.50)

If you are a first-grade teacher looking for another way to introduce manuscript writing to beginners, you will be interested in a new workbook-type text to put into the hands of each child. *Writing Is Fun* by Madeline F. Silvester is, first of all, comprehensive. It assumes

no knowledge of writing on the part of the child. It begins by developing an understanding of and ability to perform the basic strokes used in manuscript writing. Next, it will, we think, hold the child's attention. The stroke development techniques are associated with things the child knows about: rain, umbrella handles, beds, bunnies in cages, balloons, and the like.

The areas for working by the child are large but they assist in developing a conception of the smaller strokes necessary in writing. Also, sufficient preparation is provided before the child actually begins to construct the letters.

Finally, directions for the teacher—and these are simple but complete—are given in page-by-page outline form on the covers of each workbook. No elaborate handbook is necessary when using *Writing Is Fun*. The workbook includes material for teaching both capitals and lower case characters.

(Beckley-Cardy Co., 1632 Indiana Ave., Chicago 16—56c)

Note to teachers (and there are a great many of them) who want material on Central America: a recently published book, *Adventure in Central America* by Herbert C. Lanks, provides a wealth of information about all the countries of Central America seasoned with just enough "adventure" to make the factual material palatable.

Dave and Dan accompany their grandfather, Colonel Livingston of the U. S. Army Intelligence, on a trip which includes travel by airplane, bus, wood-burning railroads, and other forms of transportation in use in Central America. They visit ruins of ancient Indian civilizations, modern coffee fincas and banana plantations, mines, the capitals and important cities of the countries.

The boys learn much about the prod-

ucts of Central America, about the people who make up the populations of the various countries, about the climate and topography of this link between two continents, about the animals and plants which are to be found there.

All this makes for a fine supplementary reference volume for grades four to six. It may be that slow readers will need help at certain points but most children will have no difficulty with the vocabulary or sentence structure.

(David McKay Co., Washington Square, Philadelphia 6, Pa.—\$2.50)

Susan and the Butterbees by Ralph Bergengren is the fanciful tale of little Susan who, through the efforts of Fairy Maud (who has disguised herself as a lobsterman), has acquired forty-seven uncles! And what uncles! Originally, of course, they were a flock of sandpipers but now they are true Butterbees—bankers, taxi-drivers, grocers, and lots of things.

The charm of the story is that it is so natural; no contrivance of plot is necessary, the story seems to have written itself. (We know how much talent and labor such simplicity entails.) Another nice thing, from the teacher's or parent's point of view, is that each chapter is a complete adventure. There is much more about Susan and her uncles but each episode is complete and satisfying.

(Longmans, Green and Co., 55 Fifth Ave., New York—\$2.00)

Junior Literary Guild selections for June are: *Too Many Kittens* by Helen Hoke (boys and girls, 6-8); *Pancakes—Paris* by Claire Huchet Bishop (boys and girls, 9-11); *Ann Lawrence of Old New York* by Gladys Malvern (older girls, 12-16); *The Twenty-One Balloons* by William Pene du Bois (older boys, 12-16).

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June, 1947

SCIENCE

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south pole of the magnet at the middle of the needle and stroke toward the other end. Stroke slowly and smoothly. The more you stroke the needle the stronger it will be magnetized. CAUTION: Keep your watch away from all magnets. They may magnetize the main spring.

The needle should now have a north pole and a south pole. You may test it with a compass. The north pole of the needle should attract the south pole of the compass and the south pole of the needle should attract the north pole of the compass. If the needle is cut in two each part should be magnetized and each should have two poles. The pieces can be cut again and again with the same result. This shows that there must be an orderly arrangement of the molecules within the needle which causes it to be magnetic.

Iron may be magnetized by a process called *induction*. A strong magnet may hold up as many as 9 or 10 tacks, each one attracted to the one above it. This is possible because each tack is actually a small magnet and is magnetized by the permanent magnet. As soon as the permanent magnet is taken away the tacks will lose their magnetism. This is called magnetizing by induction.

Magnetism will act through paper, wood, glass, water, and some other common substances. The fact that this happens shows that there is a magnetic force which surrounds the magnet and a piece of iron does not have to touch a magnet to be attracted to it. This force which is around the magnet is called a "field of force" or simply the "magnetic field." This field of force will pass through iron more easily than it will through glass or paper. We say that the iron has a higher "permeability" than the other substances. The earth has a large magnetic field. In some of the mountainous regions there are large bodies of iron and iron ore. Where these are found the magnetic field of the earth will be attracted to the deposits. This causes a compass needle to change its direction and a special correction must be made for any compass bearing.

Iron is the one element which shows strong natural magnetism. There are some alloys (mixtures of different metals), however, that have much stronger magnetic properties than iron. One of these is called "alnico." It is an alloy of iron, nickel, aluminum, and cobalt. This magnet is so powerful that it will lift 60 times its own weight.

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A Few Notes Upon the Declaration of Independence and the Constitution of the United States is a leaflet which is being offered without charge by the Library of Congress.

Written in a very factual style, the leaflet does not offer many unusual sidelights on either document; however, teachers will probably find it useful for its record of the circumstances surrounding the writing, the signers, where the documents are kept, and so on.

To obtain copies of this leaflet address requests to: Library of Congress, Washington, D. C.

Summer reading for teachers might

well include this informative booklet titled *Keep Our Press Free!*

Robert E. Cushman (professor of government at Cornell University) is the author, and his discussion of a free press is comprehensive insofar as it includes such things as "How the Press Began to Get Free," "Freedom of Press in Time of War," "Peacetime Suppression of Publications," "The Supreme Court and Freedom of the Press," "Economic Restraints on Independence of the Press," and other similarly pertinent discussions.

Keep Our Press Free! is available at only 20c per copy from: Public Affairs Committee, Inc., 22 East 38 Street, New York 16.

Living and Forest Lands is a comprehensive survey of the effect of forests on our way of living. Where forests grow and why, what part forests play in commerce and industry, why forests are likely to increase in importance, and many other interesting discussions about forests and our lives.

Teachers will find this an especially helpful booklet for classroom studies because it suggests discussion topics and treats such related subjects as forests and food, forests and water for domestic use, forests and land and water transportation, and so on.

Living and Forest Lands is available from the Publications Unit, Forest Service, United States Department of Agriculture, Washington 25, D. C.

More from an artistic rather than a warfaring standpoint is *Soldiers in Ancient Days* a worth-while publication for teachers' reference.

Published by the Walters Art Gallery, it discusses the dress and weapons of ancient days in Greece and Roman times.

The booklet is well illustrated by photographs of ancient pottery (on which soldiers and battle scenes are depicted), statuettes, and weapons. Not only are these good as illustrative material for studies of ancient times, but

(Continued on inside back cover)

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Jn103 FREE. *Living and Forest Lands.* A comprehensive survey of the effects of forests on our way of living; many interesting points brought out.

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Jn105 5c. *Holidays and Festivals in Mexico.* Excellent reference and varied, colorful descriptions of holidays and festivals of Mexico.

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FREE AND INEXPENSIVE MATERIALS

(Continued from page 48)

the ideas of art that they incorporate are well worth study in art and design classes.

Available from the Walters Art Gallery, Baltimore 1, Maryland, *Soldiers in Ancient Days* is 20c per copy.

There never seems to be enough reference material for studies of Mexico, and consequently *Holidays and Festivals in Mexico* should prove an excellent reference for teachers' files.

Published by the Pan American Union, this mimeographed leaflet presents a calendar of official holidays and outstanding festivals of Mexico. There is also a colorful description of fiesta-time in Mexico and many notes about the individual celebrations.

Holidays and Festivals in Mexico is available at only 5c per copy from: Travel Division, Pan American Union, Washington, D. C.

The People of Turkey is a booklet of up-to-date material about Turkey. Written by Eleanor Bisbee and published by the East and West Association, it dispels many of the false impressions and ideas that are common in connection with this Asiatic people.

Clearly titled sections such as "Who Are Turks?" "Where the Turks Live," "Their Language," "Culture," "Home Life," "Literature and Drama," "Houses," "Food," and so on make it an exceptionally good reference.

The booklet is illustrated with photographs and a map is also included. An extensive bibliography and several suggested topics for investigation are extra helps for the teacher. The price is 65c and the booklet is available from the East and West Association, 40 East 49 Street, New York 17, New York.

CORRECTION!

We regret very much the error in our March, 1947 "Free and Inexpensive Materials" column. In that issue we stated that the publication *A Curriculum Guide to Fire Safety* was available without charge. The correct listing should have been that this publication is available at 10c per copy from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

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